

# THE MINING AND METALLURGICAL JOURNAL.

FORMERLY THE PACIFIC COAST BULLION.

VOL. XVI., No. 8

LOS ANGELES, CAL., JANUARY 15, 1897

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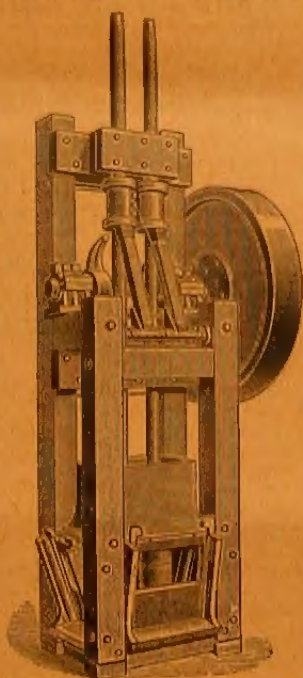
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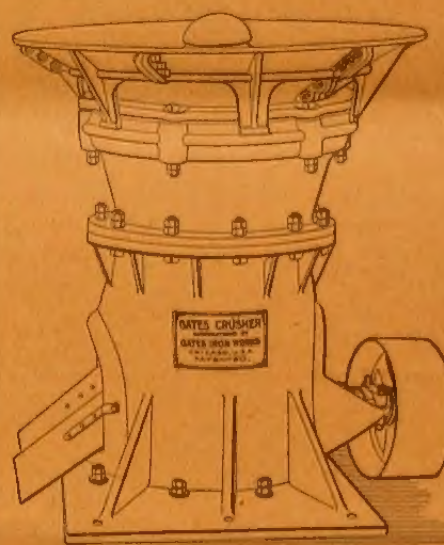


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It is not that one man, a very rich man, has abandoned democracy for aristocracy that is so important, but it is indicative of a dangerous tendency in this country, the general tendency among the very wealthy to prefer monarchy or aristocracy to democracy. This tendency is shown in many ways, in the distinguished honors conferred socially on the

titled foreigners, the practice of American heiresses in lavishing their fortunes on titled Europeans, merely in consideration of receiving the handle of a title themselves. Our very wealthy people ape aristocracy in their style of living, and look with contempt upon the masses.

The simplicity of early days on the part of high officials is disappearing, and induction into high offices is approaching with rapid strides the pomp which characterizes the coronation of kings. If disparity in the possession of wealth continues to increase we shall have class distinctions and special privileges installed in this country sooner than even the pessimist expects. Our laws of late years have largely been made to foster the interests of the money holders, and though the country groans under the burdens imposed by trusts and combinations on the part of capitalists, government has but partially attacked them. The masses endure and vote for politics that impose injury upon them. Genuine republicanism or democracy is hardly a recognized element in our institutions and laws. The money volume is kept small, far below what is demanded in the business of the country, which redounds to the benefit of the few and to the injury of the many. Cheap labor and pauperism is engulfing the nation through immigration from foreign lands, and Congress has not the courage to arrest it by legislation that will absolutely shut out the vilest, weakest and most degraded of foreign people. Trampism and incendiarism are increasing through the influence of foreign immigrants, and as soon as they involve the country in extensive disorders the hand of force will be employed to suppress them, and found aristocracy on the wreck of democracy.

NOT SO HOPEFUL.

With the failure of numerous banks and of business establishments come doubts about the setting in of that remarkable prosperity that has been expected. It is stated that a thousand saloons in Chicago have closed their doors recently. Times must be hard indeed when saloons shut down, or the people are very rapidly becoming teetotlers.

It is probable that there will have to be a vast number of settlements before business will be healthy, or general prosperity will prevail. It is folly to attempt to rebuild a structure on a rotten foundation, and hence it will be necessary that all sickly and weak business establishments shall be swept away or braced up by new and healthy blocks, as we have been doing business on the whole on the bases of  $3\frac{1}{2}$  per cent. cash and  $96\frac{1}{2}$  per cent. credit, it cannot be otherwise than that there are a large number of business institutions that cannot be made to endure through the slow process through which prosperity must come. These tottering houses keep up constant suspicion and doubt, and there will not be absolute confidence until all shaky establishments have fallen or are braced up with solid material.

Men with money are not as yet putting it out to any appreciable extent. Large capitalists do not care enough about adding to their fortunes to give themselves much trouble, certainly not enough to take risks. They prefer to invest in bonds which is not attended with hazards, and does not impose labor beyond clipping coupons. Activity, development and thrift are displayed in the highest measure when men ambitious to make fortunes put their shoulders to the wheels of enterprise.

A protective tariff may help some, but there can be no profit in production unless there is somebody to purchase the products. The real cause of the depression in this country is and has been the poverty of the general mass of the people. That poverty will continue to exist until employment and good wages are given to the idle, and that will not be done until the men who have money unloose their purse strings, or there is some plan devised to supply a larger volume of money to the country. There cannot be prosperity on mere confidence, and there will not be confidence so long as business is done on such an enormous percentage of credit and on a volume of money too small to accommodate the business of the country.

## INTERNATIONAL SILVER CONFERENCE

The Republicans in Congress are moving to bring about an early international conference on the subject of the coinage of silver for use in international commerce. Senator Wolcott, of Colorado, has gone over to Europe to confer with the bimetalists, so it is stated, for the purpose of arranging the plan of proceeding. All this is very well, and every lover of America will hope that the scheme will be successful. The activity of bimetalists in Great Britain and Germany gives some encouragement, but they are very meagerly represented in the governments of these countries.

The German Chancellor states that a conference will be futile unless Great Britain agrees as a condition precedent to reopen the mints of India. We doubt if it is possible to induce the British government to make that agreement. India contributes \$85,000,000 annually to the British exchequer. So long as silver was the medium of exchange or money of India, that sum was paid in rupees, which are silver coins, but since India has been put on the gold basis, the revenue contributed is payable in gold instead of silver which gives Great Britain the advantage of the 37 per cent for which silver is discounted, or to the extent of more than \$31,000,000. Great Britain is not going to throw that away to oblige Germany, the United States or any other nation.

Should President McKinley appoint a mixed commission, as did Hayes, Garfield and Harrison, he might as well not appoint one at all, for it will go there at loggerheads among themselves, with no definite proposition to submit, and probably to be divided on any proposition that any foreigners may submit. To show that we are in earnest for bimetallism there must be a plan prepared which our representatives will stand by and press with vigor. More than that our conferees should be prepared to say that unless a satisfactory agreement can be arrived at, that this country will open its mints to the free coinage of both gold and silver on its own hook. That probably would have some weight, and perhaps enough to produce a favorable result.

That until there is an international agreement, it is unsafe for us to adopt bimetallism, is the sheerest nonsense. Silver was not demonetized by such agreement, it was done by independent national action, Great Britain leading off, followed by Germany, fifty-eight years later, then by France, and, lastly, by the United States. As we were the last to fall into line with goldism, let us be the first to lead off in favor of the double standard, at least so far as our domestic trade is concerned.



## BANK AND BUSINESS FAILURES.

The extent to which business has been done on credit for the last eight or ten years could not have produced any other result than that which the country is now experiencing, when for a considerable part of that time there has been an abnormal condition of depression. The credit system has produced that depression in a great measure, and it is a system that has largely grown out of the insufficiency of the money volume. There may, and probably will be, continued failures until insolvent dealers are all swept away, and dishonestly and recklessly managed banks all close their doors and go into liquidation. This will be the case notwithstanding prosperity may return to a remarkable extent. But there will be no such prosperity as will remove the load of debt resting upon a large percentage of the dealers. Whatever advantage to the country that may ultimately be realized from the policies of the Republican party and the new administration, it will not be perceptible for many months to come, because existing laws are not likely to be materially changed during the present session of Congress, and it will take considerable time for the new Congress to enact others in their stead and for the business of the country to become adjusted to them.

Whoever expected that the mere result of the election would be sufficient to set in rapid motion the wheels of prosperity was greatly deluded. Before any appreciable change becomes manifest there must be something done to stimulate industries.

As the economic laws enacted by the last Congress depressed our industries, they must be superseded by those that will reanimate them. The people however should not wait for their enactment, but they should unitedly exert themselves to create as much prosperity as possible with the means they possess.

The *Weekly Independent Silver Advocate and Southwest Miner*, published January 1st, at San Bernardino, Cal., under an article, entitled "Wave of Prosperity," "Fast Assuming Proportions of a Tidal Wave," prints a list of firms who have failed within a week. The list occupies nearly a column, and the liabilities, over and above the assets, range from \$150,000 to \$3,000,000. This looks like a "Wave of Prosperity"!

## CORRESPONDENCE

## CALIFORNIA.

## The Picacho Gold Mines Richer and Better.

Last Wednesday, January 6th, very rich ore was struck in the Little Frank shaft in the Noonday mine, as rich as anything yet found at Picacho. The shaft is 600 feet north of the Alfonso shaft, on the same vein of ore in which the rich strike was made a few days ago. The ore fills the bottom of the shaft. The rich pay streak is 16 inches wide and growing larger. Ore taken out on Thursday will pay \$1000 per ton.

The most important strike ever made at Picacho was that in the Gold Cup, Red Bird and Iron Hand mines, all on the same vein, last Monday. The great vein is from 80 to 200 feet wide, carrying good free milling ore, that averages from \$5 to \$50 per ton. Samples

taken from the croppings on the Red Bird and Iron Hand mines, 4000 feet apart, run from \$45 to \$50 per ton. The vein crops out for 4500 feet and shows plainly on the Golden Sunset, rising in places 150 feet above the surface of the country around. It is within 100 feet of the Yuma wagon road and trail, over which thousands of persons have passed since the discovery of gold in Picacho, thirty-five years ago, little dreaming that this great vein of rock was a bonanza.

Rich ore was also struck in the Del Mar and De Smet mines, on another great vein in the Picacho Basin, on Tuesday. This is also from 50 to 100 feet wide, and the ore is of the same general character and value as that in the Gold Cup and Red Bird mines. These are the same mines that were bonded by Harry F. Selleck, of Col. D. K. Allen, last year, for George Gould and M. E. Graves of New York. In the White Gold Basin, the Planet and Sirius mines in the Pleiades group lead off with the largest bodies of good ore yet struck in that section. On Monday, Col. Allen, in his work opening this group preparatory to putting up a mill, found a body of ore 12 feet wide that runs from \$8 to \$50 per ton. Lying north of this is another, 20 feet wide, that averages \$6 per ton. On the south side is still another, 80 feet wide, that averages its entire width from \$4 to \$5 per ton. These have been traced the entire length of the claim.

The ore in the Eddie Hodges mine runs from \$8 to \$15 per ton, that in the Colossus from \$7 to \$12, that in the L. O. Smith from \$5 to \$15, that in the Neptune of the Pleiades group from \$20 to \$30, that in the Pleiades mine from \$8 to \$10.

Col. Allen has ordered a 60 ton mill for the Pleiades group, which is now on the way to Picacho. He has also ordered another 60 ton mill for the Capella group. Both of these groups are on the White Gold vein.

The Golden Dream mill, 10 stamps, is nearly ready to start up. It will run on Noonday ore. Ex-Senator S. W. Dorsey is in London, closing the arrangements for building his 100 stamp mill. Col. Allen did the assessment work on 160 of his claims. Other parties did the work on 65 others. Rich ore or fine prospects were found in more than one half of these 225 mines.

The Golden Dream Mining Co. is officered as follows: George W. Ireland, president; Col. D. K. Allen, 1st vice-president and general manager; J. L. Rice, 2nd vice president; Emerson Gee, chief engineer and assistant general manager; M. R. Ritchie, superintendent of mill. Messrs. Ireland, Allen and Gee hold the same positions in the Pleiades and Capella Mining Companies. The Capella group is situated on the east end of the White Gold Vein, and promises to be one of the best in the Old Picacho Mining District.

The vein of ore is from 80 to 100 feet wide, and the ore averages \$5 per ton in free gold.

A cross cut has been run on the 60-foot level on the Noonday mine. The vein is 39 feet wide. The ore averages \$5 per ton in free gold. The shaft is only 200 feet from the mill.

The Golden Dream mill will have three oil engines; one will run the pump, another the crusher and the third the 10 stamps.

Never in the history of the Picacho mines was the future more bright, prospects better, more work being done, nor results more promising. Those who have laughed and sneered at the old camp are eating their crow, and rushing in to get hold of something before they get left.

X. X. X.

## IDAHO.

## Mineral Resources of Florence, Idaho.

FLORENCE, IDAHO, Jan. 8, '97.

EDITOR JOURNAL:—Florence, discovered in 1861, has produced over \$75,000,000 in gold from its placers. Twenty years ago numerous rich bodies of auriferous ores were superficially worked by arastras and other crude devices; now, in the due evolution of mining property, those mines are being systematically developed and the ores are reduced by the last designs of modern machinery, and it is an assured fact that the camp of Florence is destined to eclipse its former record of production. An immense undertaking is now under way to thoroughly demonstrate the value of the camp, being nothing less than a tunnel from the Salmon River to tap the camp 2500 feet deep. The run will not have to be over four miles to crosscut the best-known portion of the camp, and the first vein of ore will be cut in 500 feet, and it is safe to say at least one vein every 500 feet afterwards. As the ores of this camp are all free milling, it will not require very extensive reduction works. All mines in line of tunnel are being pooled, preparatory to being turned into the company. The capitalization of this project will be \$25,000,000. Work will be commenced not later than May, 1897. Power for all purposes will be taken from the Salmon River, electricity will be utilized wherever it can be handled. Air compressors and drills and transportation machinery will be of the most modern design. The dimensions of the tunnel will be 10x12 feet in the clear, with a 4x4 foot drain. This enterprise is being promoted by A. Walker, of Florence, with the assistance of eastern capital.

The Banner Gold Mining Co. have recently opened up a big body of ore, which mills \$40 per ton.

The Gold Bug Co. have now in sight 20 inches of ore that averages \$100 per ton; it (the ore) is in the form of an oxide of iron, and the gold can be panned out without crushing.

The Tip Top Mining Co. This company, operating on the Tip Top and other mines, have let a contract to run a tunnel 250 feet on the Tip Top. The vein is 8 feet wide and the ore runs \$20 in gold and 40 oz. in silver, free milling. This property is managed by H. Hamlin.

The Ozark mine. This property has recently changed hands and work has been resumed under the management of A. Walker. Two shifts are being worked on the mine, and the five-stamp mill will soon be ready for crushing. The vein is 3½ feet wide, and mills \$10 to \$12 per ton.

There are at present 150 different properties being operated here, all producing ore; snow is now 5 feet deep, with winter only commenced; but, as the roads are kept open on account of the heavy traffic, transportation facilities being better now than they are in the spring and fall, it is of easy access.

I. X. L.

Arizona has a mining law which will not allow the re-locating of claims to avoid assessment work. It compels the locators to do development work. Such a law is a necessity in California and it is to be hoped that it will pass the next Legislature.—*Mining and Scientific Press*.

The Golden Cross stamp mill out at Hedges, San Diego county, Cal., is now cleaning up \$1000 a day.



## Miscellaneous Mining News.

### ARIZONA.

Professor Blandy, ex-territorial geologist, who is compiling the mining statistics of Yavapai county, makes the statement that the mineral output of that county during the past year will exceed that of 1895 by \$300,000.

The successful placing of the bonds of the Vulture mine would be the means of re-opening the grandest gold mine in Arizona. This mine has produced quite \$15,000,000, yet the greatest depth ever attained on it is less than 40 feet.—*Free Press*.

Ore has been found in the St. Peter-Martin properties, near Jerome, which assays \$1,744 in gold. These claims will develop into great paying properties.

The *Williams News* says that F. R. Nellis has bonded thirteen of his Canyon copper claims for the sum of \$13,000 to a strong financial company of Boston. This company will at once expend a large sum of money in the development of these properties, which means much to this section, and in all probability marks a new business epoch in Cocino county.

The oil well discovery at St. David, in Cochise county, has created quite a little excitement. A high Southern Pacific official, who was at Tucson when the report was first made known, came to the scene of the diggings. He made a thorough examination of the oil, taking with him samples to be tested, and also spoke encouragingly of the formation and depth. The Southern Pacific uses considerable oil for fuel and should the new strike develop into paying quantities, that company would be in the market for every drop and also, doubtless, sink wells thereabouts. Further developments are anxiously awaited.

Frank Maguire and sons last week brought in to Kingman a ton of ore from the Lookout mine, owned by J. S. Withers, which gave a return of seventeen ounces in gold. One sack of ore from the same mine gave a value of \$6,000 per ton. This is a good showing for the Lookout. There is no doubt that the mine would show up great quantities of ore fully as rich as this if it was worked in a systematic manner.

The shipment of a carload of ore every other day is going forth from the Telephone, near Tombstone. This mine is owned by Messrs. Scribner, Farrington, English and Barron.

The United Verde Copper Company of Jerome, which nearly doubled the capacity of its plant during the past summer is still engaged in enlarging its plant and increasing its capacity. Parties who are in a position to know of the output of that mine estimate that its daily output now averages between \$15,000 and \$20,000.

The Wallapai Company, at Music Mountain, Mohave county, are driving a crosscut tunnel that will cut their main ledge over 400 feet below the croppings. The tunnel will be 800 feet when completed and will cross 12 ledges that crop on the surface beside the probability of other blind ledges. They are gold mines. The company is working 20 men. Hackberry is the nearest point on the road, and the nearest point where the company purchase their supplies. J. A. Chestnut is he superintendent.

The long tramway of the Buffalo Mining company at Globe has been completed, and a large force of men will be put to work immediately taking out ore.

At the Wood-Morton mill on the Verde river, gold is being plated from ore taken from the Ring mine in the Cherry Creek district. The mill is under the management of Bert Morton.

An abandoned mine, which was being worked evidently fifty years ago, has been discovered near Mountain Springs, seven miles from Hillside, and fifty miles west of Prescott. The mine was well developed and is rich in gold. The ore is red from oxide. It was discovered by two men named Marcomy and Walters.

Con Cronin reports that a few days ago at the 300-foot level of the La Fortuna mine a new chimney of ore, the richest yet discovered, was struck.

### A Rich Strike in the "Wedge" Mine.

In doing assessment work on this claim, just back of the court house, John Rainy made a strike Saturday which may develop into a snug fortune for its owner. The mine adjoins the Southwest, one of the T. M. & M. properties which are producing ore running as high as \$2,000 per ton and has been working for twelve years.

To one side of the new discovery is a shaft sunk out of which \$20,000 was taken near the surface from a big kidney of ore, and from all accounts the ore found hereabouts lies in pockets. The find was made in less than five feet from the surface and is about one foot wide, apparently imbedded in lime. Whether the ledge continues down or opens up into a chamber of ore, or whether it is a small kidney is past conjecture and can only be demonstrated by following the ore, which is being done. Flakes of horn silver is plainly discernable, and the character of the ore shows it to be of fairly high grade. The progress of work and outcome of the find will be watched with interest.—*Tombstone Prospector*.

William Sweeny and James Dundon are working quite a force of men on the Oro Plata mine at Kingman, and are getting very rich gold and silver ore. They have the main shaft down 100 feet and in good ore all the way. The winze, 180 feet north of the shaft, is in rich ore. Hank Lefler, who is pushing the main tunnel ahead, has opened up a splendid breast of ore.

H. B. Carington, H. McComb, Fred K. Thomas, Leonard Thomas, of Denver, shareholders of the Excelsior Mining company of White Hills, were at Kingman last week on their way to the mines. Leonard Thomas is manager for the company. It is thought that the visit of these gentleman will result in great activity among the mines of the company.

A roller and cyanide process has been started in operation in Fool's Gulch. At the Congress mine a new roasting process for drying the ores has been put in operation with the cyanide works. This is the third of its kind operating in the United States. From the Granite Reef mine, two miles west of Congress, come reports of a new strike. Strikes of rich gold ore are reported from Antelope Hill.

The Gold Cliff Mining company, which was recently organized by Frederick Stock, of Los Angeles, and others for the purpose of developing and operating the Johnson-Fitts mine on Tomlinson hill at Pearce, is a strong company and is already displaying great activity. Arrangements have been made and men employed to sink the shaft to the depth of 200 feet, from which level drifts will be run and mining prosecuted in earnest. Men are already at work in these shifts. The necessary offices are to be constructed at once. A whim, already in place, will be used temporarily during the progress of development work; but if the company maintains the degree of activity which has characterized its initial movements it will not be long until the mine becomes a lively producer. As its name indicates the mine is a good property. The character of the ore has improved steadily with depth, and eighty feet from the surface the ledge measures eleven feet in good mining ore.—*Phoenix Republican*.

### CALIFORNIA.

#### AMADOR COUNTY.

The Kennedy mine at Jackson, was a mine that had been worked for some years and then abandoned. In 1885 some San Francisco people, about twenty in number, purchased the property, and September 4th, 1885, opened the mine. The original cost of the property was \$100,000. The amount expended in development, including all voluntary assessments, was \$100,000. On May 1st, 1887, the first dividend was paid, and the mine has never ceased since then paying dividends monthly. The dividends to date amount to nearly \$2,000,000. The present value of the property is also estimated to be about \$2,000,000. The depth of the present shaft is over two thousand feet, showing on bottom level a large body of high grade ore.

#### Sutter.

The Bahol mill on Sutter creek is nearing completion.

The drift south from the 700 level in the Central Eureka has been reopened and extended in 200 feet. In the bottom a large mass of quartz has been encountered which carries good looking sulphurets.

#### Drytown.

The Eastern owner of Dryton mine has ordered the shaft driven to the 1000-foot level before any prospecting of the ledge be done.

#### Amador.

T. C. Mayon is superintending operations on the El Dorado mine for the Alaska Commercial company which recently purchased the property. They are preparing to sink by putting up machinery and buildings.

#### CALAVERAS COUNTY.

The Gwin mine, near Mokelumne Hill, is owned by the same people who own the Kennedy mine near Jackson, Amador county. It is being opened up and developed on similar lines as the Kennedy. A new shaft is being sunk on the old mine, which was full of water, caved in, and practically abandoned for nearly twenty years. The new three-compartment shaft is now down over 1,100 feet. It is a fine piece of work which cost about



\$75,000. The Gwin mine may prove another Kennedy. This is one of the many striking instances of what grit and coin will do. The men who took up the Kennedy mine are all Californians. It was considered "played out," yet by their energy and persistence they made it one of the greatest gold producers in the State.

#### ELDORADO COUNTY.

The announcement of the sale of the Griffith's Consolidated Gold mine, near Diamond Springs, Eldorado county, for \$20,000, has been made. The purchaser is P. George Gow, who bought and successfully developed the Jumper mine. Griffith's Consolidated is to have a new plant. It is a promising mine on the mother lode, is now 140 feet down and has many characteristics similar to the famous Rawhide mine.

#### KERN COUNTY.

##### Roaring Randsburg.

Postmaster Kuffee has received orders from Washington to the effect that a daily mail will be put on between Mojave and Randsburg on or after January 15th.

Sometimes ten or twelve freight wagons, ponderous vehicles, are seen standing in front of new claims just taken. The following day up will go buildings, and the man who was at Randsburg last week doesn't have the faintest conception of the town today, and the wayfarer of today knows nothing about how the town will look a fortnight hence. This is a town of unprecedented growth and unparalleled activity. It is strictly cosmopolitan. The man beside you may have come from the state and county that you call your home, or he may have come from a section three thousand miles from the place you call home.

Messages are now transmitted by telephone to Mojave, thence by wire to any part of the country.

There are very few claim jumpers. It was feared there would be many more, but the jumpers haven't come yet.

The great west is very generally represented at Randsburg. Colorado has hundreds of people there. Cripple Creek has a colony of her own, and there are people from Alaska and Kansas, Pennsylvania and New Mexico, New Jersey and Idaho. It's a great old crowd, the gang up at Randsburg.

The great question of water is the problem that confronts Randsburg people today. With a view to solving this question many wells are now being sunk. It is the general belief that water will be found, and at a depth not exceeding 60 feet. People are not looking their eyes out for gold now so much as they are for water. A town without water is most undesirable. No one can understand it until he stops in Randsburg a week or two. It is believed that the water problem will have been solved by the 10th inst.

A physician by the name of Vial has opened an office at Randsburg.

T. W. Helm has purchased a large threshing engine from Joe Smith, and it will be used to run the Helm stamp mill out on the desert. The engine is being overhauled at Fish's blacksmith shop, at Bakersfield, and when finished it is expected it will develop about twenty-five horse power.—*Kern County Echo*.

A cyanide plant, with a capacity of twenty tons a day will be put up at Cow Wells, about twelve miles from Randsburg, in Kern county, Cal.

A new mining company, capitalized at \$1,500,000, has been formed at Randsburg. It will place its stock, valued at \$1 per share, on the market at 12 1/4.

W. C. Wilson, of Mojave, sold some mines north of Randsburg for \$1600 cash.

I. F. McShane has filed a mechanic's lien for \$80 on the Yucca Tree and the Merced gold mines at Randsburg. He said he was hired at \$2 per day to sink a shaft on each of the claims and worked fifty days. He was paid \$20 on account and now wants the remaining \$80.

A rich discovery was made December 17th, of a gold and silver ledge that assayed \$94 to the ton, by A. Montgomery, who has been prospecting in the Randsburg country since September, and was recently joined by Sam'l Wible, of Bakersfield. The property is located about seven miles northeast of Randsburg and has plenty of water near by. A ton of the ore has been shipped to San Francisco.

#### RIVERSIDE COUNTY.

##### Miners' Convention.

A meeting of the miners of Pinacate Mining District was held at the office of the recorder of the district, at which it was resolved to call a convention of miners and others interested in mining property to be held in Perris about February 1st. A committee was appointed to make the necessary arrangements, fix the date and announce the same through the public press.

The mining men of San Diego county have signified their intention to participate in the proceedings, and it is hoped that the mining people of San Bernardino, Kern and Los Angeles counties, and of the desert generally, will join in and make this a representative meeting of all the mining interests of Southern California.

The purpose of the meeting, in addition to revising and making uniform the bylaws of the various mining districts, is to consider and make an effort to secure such legislation at the present session of the Legislature of this state as will foster and encourage the mining industry in this part of the state, as well as to protect the miner in the possession of his mining claim. A custom is growing of recording location notices with the County Recorders, and as the amount of evidence required to establish a custom varies in the various courts, no man feels himself safe in the possession of valuable mining ground unless his location notice is recorded with both the district and county recorders; an unnecessary and vexatious expense.

Another matter that will receive attention is the method employed by the Southern Pacific Railway Company in securing title to valuable mineral lands. This corporation publishes notices of its intention to apply for certain specified lands as agricultural. If any protest is filed by one claiming the land as mineral, the application is withdrawn, and in a short time re-advertised and begun anew. This is repeated over and over again, so long as a protest is filed, until the miner is worn out or caught napping, when a patent is issued, and the officer of the government calmly announces "that the land in question has ceased to be a part of the public domain, and the government is no longer concerned in any inquiry as to its status as mineral land or otherwise." The present procedure in the Interior department needs readjusting by act of Congress.—*Riverside Enterprise*.

A very rich streak of pay ore was found in the Leon mine, seven miles southeast of Perris, last week. Superintendent Morehead was showing some extremely handsome specimens on the streets of Riverside Saturday, January 2d. They have pushed the work on the Leon mine so rapidly that a mill will soon be erected, as sufficient ore is on the dump to pay for it, there being about \$20,000 worth.

I. N. Boicourt has bought the Bay Queen and Anna H. mines, located near Perris, from Hammitt & Alton. He will immediately put on a force of men to open up these properties. The Cash Entry was also purchased by him at the same time.

Manifee Wilson and his partner are hard at work on a claim that they have discovered out in the Manifee district, about three miles south of Winchester. It is reported that the ledge is showing up well.

John Lang, the prospector who made the original location for the Lost Horse mine, has just made another find about three miles from that famous property, which promises to be quite as rich. His latest find is situated three miles across a gulch from the Lost Horse, and he has a ledge which is from 18 to 24 inches across, and which assays \$300 in gold. He has commenced to develop it.

Work at the Lost Horse proceeds regularly, and, with the 2 stamp mill which is operated, they are taking out from \$5000 to \$7000 per month. The mine is the greatest producer for the amount of work done there is on the desert.

#### Gold in Cajon Pass.

E. C. Whitton, of Cajon Pass, was in San Bernardino Jan. 1st, and he brought in word of a discovery of gold which has recently been made near Whiteman's place, not far from Cajon station. And the surprising thing about it is that he solemnly avers that it is found in sandstone, and runs several dollars to the ton. He says the find is causing some excitement in the vicinity.

#### New Mining District.

The Defiance Mining district was organized on December 26th by thirty-four miners having claims in the Iron canyon part of the desert. The boundaries of the district are described as follows: Commencing at a stone monument about half a mile south of the mouth of Iron gulch and running in a northwesterly direction to the apex of Sugar Loaf mountain, thence northwesterly on a line ten miles from the place of beginning, thence north ten miles, east fifteen miles, south ten miles and southwest five miles to the place of beginning.

Only mine owners and prospectors having been in the district for thirty days will be allowed to vote at any mining election. Each claim must be marked by four monuments and ten feet of development work must be done on each quartz claim within six months from the day of location, assessment work being counted at \$4 per day. E. R. Baker was elected district recorder for the year 1897.

#### Gold Mountain Shuts Down.

The work at Gold Mountain has suddenly shut down, and no satisfactory reason has yet been given for the stoppage of the work. A month ago about twenty men were taken to Bear valley by the company which had leased the mine from E. J. Baldwin, and what was



supposed to be a winter's work was commenced. A 10-stamp mill was taken to the mine, and it was understood that development work was to be pushed vigorously.

The first intimation of anything to the contrary was when some of the miners reported in San Bernardino January 6th, bringing word that work had been stopped, and that all the men, or the larger part of them, had been discharged. They were paid off in full and told that no more work would be done.

There are several explanations of this step. Probably the most rational one is that there was a shortage of water, two wells having been put down without getting water for the mill, and it was thought best to thoroughly investigate the water question before proceeding farther.

Another explanation offered was that Superintendent Church was furnished with a certain sum of money, and instructed to use it, but stop when it was spent, if nothing had been developed.

A third reason offered was to the effect that the company after sending Mr. Church here as superintendent, sent out an engineer or expert, and there was a clash in authority, and difference of opinion as to the best method of carrying on the work.

Whatever may be the difficulty, the Gold Mountain is closed down for the winter and the miners are returning to the city.—*San Bernardino Weekly Sun*.

The Colton Cement works started their fires the first of the year, and this time it is said that they will not cease operations so long as the demand remains good for the excellent quality of material which they furnish. A full force of men were started working in the quarry several days before the first of January to mine and run down a sufficient quantity of rock. The people of Colton are very much pleased with the renewed activity at the plant, as it means the employment of many men and a consequent prosperity in a local way. The people of the county in general, however, will watch the movements with a great amount of interest, as there is but little doubt in the minds of all mining men that the change of the plant from a cement works to a first-class smelter would mean a rapid development in many of the mining properties of the county and a subsequent widespread prosperity to miners and mining men.

#### Oro Grande Notes.

This place has undergone a development in mines until it is believed by local men that it stands second to no place in the county. Everywhere there is an activity that portends well for the future of Oro Grande.

The smelter which has been under construction for the past six weeks is now completed, with a capacity of 40 tons per day. It is receiving ore daily, and Superintendent Spears has notified the public that the smelter will commence operations as soon as he gets 1200 tons of ore, or one month's run ahead.

Morgan and Decrow have made a very rich strike in the old What Not mine, and from 30 tons of ore will realize about \$2500. Danna and Decrow are now developing one of their claims, about 12 miles from here, and have struck a two-foot ledge of ore that goes 200 ounces of silver and 40 per cent. in lead, which will be of great value to the smelter as a flux.

Two hundred tons of ore are now in the bins of the Koehn Springs mill waiting for treatment.

The El Dorado Canyon mill, on the Colorado river above Needles, is now on a steady run.

The Kramer mining district is coming to the front at a rapid rate and now bids fair to soon equal the glories of Randsburg.

Today two cars of rich ore from the already famous St. Elmo mine, in Northern San Bernardino county, will be sent to the Pueblo smelter.

The capacity of the mill out at Koehn Springs, this side of Randsburg, has been doubled. Ten stamps are dropping now where five did business before.

Chas. Koehn, owner of a mine in what is termed the "stringer country," near the north line of San Bernardino county, is taking out some extremely rich rock.

We understand the Campbell mill at Vanderbilt is now running steadily, with results that are entirely satisfactory, and the outlook for the camp is brighter than for some time.

L. C. Currier, who spent several days at the Virginia Dale camp, is home in San Bernardino. He says that things are exceedingly lively out there, and newcomers are pulling in every day. The lack of facilities for milling ore retards the development of the mines of that section. He spent a day or two at the Lost Horse mine, where he ran across Jep Ryan, who had just come in from Miles City. The boys have been doing good business with the two stamp mill, the average month's run being in the neighborhood of \$4,000. While Mr. Currier was there, they made a nineteen days' clean up which returned \$2,500. In making the trip back to the railroad, Mr. Currier met twenty-five men headed for the district.—*The Weekly Independent*.

#### SAN DIEGO COUNTY.

The National Bank of California received from the Golden Cross mine near Yuma, three bars of gold bullion aggregating 1374 ounces, and valued at \$20,000. This represents about a twenty days' run, the daily output of the mine averaging nearly \$1,000. Last month's clean up netted \$29,000. The bullion is usually shipped from the mine direct to the National Bank of California to be forwarded to the bank of San Francisco. The Golden Cross is taking rank as one of the best producers among the mines of Southern California.

#### TOULUMNE COUNTY.

##### Soulsbyville.

The lease holders of the Mountain Belle are sinking on the extension of the Wheal Perran vein. The rock encountered shows free gold.

The shaft on the extension of the Soulsby vein is not being worked although there is a very good water power hoist. The last crushing paid \$75 per ton in free gold. The shaft is 100 feet deep and needs only to be sunk another lift to make this mine very valuable. It is rumored that a strong incorporation will shortly own this property.

The Wheal Perran mine has just been unwatered preparatory to active work and equipment. This mine was in the early days very rich, the ore running up into the hun-

dreds per ton, sulphuret value, and \$70 to \$80 in free gold, but the levels and stopes were all gouged out by the owners, and left, generally in a very bad condition. This mine can be operated by water power, having a pressure of over 300 feet. It is a parallel to the famous Soulsby.

The Soulsby mine is equipped second to none in the State, having both water and steam power. The shaft now is sunk over 200 feet and stoping is in progress from this level upwards. The ore is of high grade which the returns from the mill will shortly testify. A tramway 3000 feet long connects the hoist with the mill, over which the ore will be conducted in cars and operated by electric trolley power. The mill is nearly completed, having 15 stamps with all accessories needed for a first class plant—concentrators, canvas tables, etc., etc.

##### Mother Lode.

The Jumper still is producing their now famous clean up.

The Ape mine is in good ore, and cleaning up good monthly returns.

The Golden Rule is progressively developing, as all of the other mines in this section are doing. Time and space will not permit of any extended notice.

At the Tarantula a few men are prospecting the ledges with a view of determining where the developments shall be put in. At least that is the presumption.

The Alabama is being actively developed by shaft sinking. Our esteemed friend, Billy Nevills, is the competent and successful superintendent. Under his guidance the Alabama will in time add another jewel to the diadem of Old Toulumne.

The Rawhide still sustains its former reputation as a gold producer, their values are found largely in their sulphurets now. Their chlorination plant is second to none on the coast. A large number of miners and employees are kept constantly on the pay roll.

The Whisky Hill property is being opened up, and I feel sure this mine will show up well when the necessary developments are made, so that when a mill is warranted to reduce their large ore bodies it will have full complement, but we must give them time to get into proper shape first.—*Toulumne Independent*.

#### Oil Fuel for the German Navy.

The German naval authorities have decided to equip all the existing large men-of-war in the German navy with apparatus for heating their boilers partly with oil, and the use of liquid fuel will, be provided for in all new vessels. The oil will be stored on board in special tanks, from which it will be conducted to the furnaces by pipes and ejected in a spray by steam. For the storage of the liquid fuel in large quantities, reservoirs holding over 100,000 gallons have been built at Wilhelmshaven; and similar arrangements are to be made at Kiel and Dantzig.

A company has been organized in Glasgow, Scotland, under the name of the Meldrum Tunnel and Mining Syndicate, to run a tunnel, 22,400 feet in length, from near Ironton to the Telluride side of the mountain in Colorado. The cost is estimated at \$2,000,000.



## COLORADO.

## Output of Leading Cripple Creek Mines for 1896.

	Tons	Gross Value.	Men Employed.
Portland.....	30,000	\$1,600,000	175
Independence .....	10,800	900,000	100
Victor.....	14,000	435,000	120
Isabella.....	9,824	526,196	175
Elkton .....	7,500	458,979	120
Doctor .....	6,000	600,000	60
Anchoria-Leland....	4,718	305,103	95
Strong .....	3,000	300,000	60
Union Gold.....	4,863	286,043	120
Last Dollar.....	5,000	200,000	60
Anaconda.....	6,000	185,000	75
El Paso .....	6,000	375,000	60
Gold Coin .....	5,000	200,000	100
Prince Albert .....	2,200	100,000	10
Jefferson .....	1,900	175,000	20
Ironclad.....	3,000	100,000	12
Geneva .....	1,000	30,000	20
Favorite.....	1,250	75,000	12
Vindicator.....	1,000	70,000	14
Theresa.....	1,050	84,000	20
Legal Tender .....	2,200	44,000	50
Lillie.....	2,500	50,000	45
Christmas.....	700	28,000	14
Specimen.....	500	17,500	15
Bankers.....	500	20,000	20
Bogart.....	100	5,000	6
Los Angeles.....	600	24,000	6
Colorado City.....	200	10,000	4
Squaw Mountain...	150	15,000	8
Nellie V.....	330	47,000	10
Abe Lincoln.....	392	19,233	40
Arcadia .....	600	45,000	45
Granite Hill .....	250	25,000	12
Raven.....	2,700	80,000	63
Work.....	735	17,715	12
Gold Crater.....	1,900	57,000	40
Garfield-Grouse....	700	75,000	35
Moon-Anchor .....	2,284	101,135	50
Gold Standard .....	130	6,500	10
Chief.....	150	9,000	11
Modoc .....	600	30,000	15
Trail .....	800	32,000	12
Pharmacist .....	1,000	50,000	35
Fannie B.....	50	10,000	30
Orizaba .....	100	5,000	8
Keystone.....	250	10,000	4
Lucky Guss .....	800	32,000	20
Dead Pine .....	100	4,000	12
Granite .....	300	18,000	20

## PUBLIC DIVIDENDS PAID BY CRIPPLE CREEK MINE COMPANIES IN 1896.

Portland .....	\$360,000
Victor.....	240,000
Isabella .....	180,000
Anchoria Leland.....	30,000
Union Gold .....	82,744
Elkton Cons.....	90,000
Moon-Anchor.....	30,000
Garfield-Grouse .....	12,000
Plymouth Rock.....	65,000
Gold and Globe.....	10,500
Mt. Rosa.....	6,000

—Cripple Creek Mail.

## LOWER CALIFORNIA.

John McCool returned to Hemet from Ensenada, Lower California, Monday, January 4th, where he has been on business connected with the mines in which he is interested. He brought back with him a mineral patent for the Golconda group of mines in which Messrs. Bratt and Yetter, of Hemet, are associated with him. There is now nothing to hinder them from going to work to develop their placer diggings. They have the title,

the lack of which in the past has been the only drawback to mining development in that country. When a patent has once been obtained it is as good as one in any country.

F. E. Russell, a brother of Major H. M. Russell, arrived in Eusenada the last of December from Los Angeles and will resume work on the Aurora mine in the Alamo, which has recently been bonded through F. M. Bradshaw to a Chicago company. The Aurora, in days gone by, was one of the best paying properties on the Peninsula, and the fact that the old works will be reopened and further explored will be particularly cheerful news.

## MEXICO.

## Rich Gold Mines

The "Tlatlaya Gold Mines," State of Mexico, will undoubtedly be, in the near future, the center of a great number of rich mines, as a number of valuable veins have already been found. The mining territory belonging to Mr. De la Camara & Co. is composed of three groups—the first with the mines at "Perseverancia," "El Olvido," "La Mejor," "Tres Amigos" and "La Colorado" is very rich in "free gold." These mines are located in the famous Cerro de los Ocotes; the second group is rich in copper, and the third has some auriferous veins, rich in silver-lead. A number of assays have been made from the above mentioned mines, and a large deposit of ore has already been made in the offices of the company and all show signs of great richness, especially those of the first class, which contain native silver, presenting to the naked eye a splendid aspect. The group has sold already several amounts of ore to the U. S. Smelting works, and the assays have given the following results in silver, from 8,000 ounces to 1,800 per ton of 2,000 pounds, with from 10 to 47 per cent. of iron; the copper ores from 18 to 61 per cent. silver, 40 to 60 ounces gold; the lead ores 62 per cent. lead to 80 ounces of silver and 8 per cent. gold. It is thought that with a large quantity of low grade ore which will run say, 20 ounces to the ton of silver and 25 per cent. iron or lead, that expenses can be paid and still leave a splendid margin for the owners.

## Anglo-Mexican Mining Co.

The report of the directors of the Anglo-Mexican mining company, limited, for the year ending 30th June last, states that the total receipts amounted to £169,650, and the expenses (including £2,000 written off for depreciation) to £76,166 leaving a balance of £93,484 as the profit for the year. Out of this sum, and the balance of £132,541 brought forward, the directors have paid during the year £92,807 in dividends, and since the date of the accounts further dividends, amounting to £37,123, have been paid, leaving £96,094 to the credit of revenue, out of which the directors have set aside £50,000 to write down the "cost of properties" account, £15,085 has been expended during the year in development and dead work, and it will be necessary to continue these works in order to prove and open up the mine in depth. The mine has already materially improved. The mill has been working regularly and well, and has crushed during the year 17,806 tons of ore, yielding bullion of the value of £165,127. The method of treating the tailings has at last been decided,

and a plant is being erected for this purpose. —*Mexican Financier.*

A terrible disaster occurred in the Santa Gertrudis mine at Pachuca, December 31st, one of the most famous silver mines in the Mexican country. For some cause not known fire broke out in one of the levels of the old southern workings, shutting off the exit of thirteen Mexican miners. Miners on the outside went to work to try to put out the fire, and save the men. One Englishman, Ned Richards, an experienced miner, went down in charge of the rescue operations, but perished from suffocation. All the Mexicans died from the same cause or from burning. The affair caused the greatest excitement, as it is one of the most horrible mining accidents in the history of Pachuca. The bodies have all been recovered, the mine cleaned out, and operations resumed.

It is stated on good authority that La Campana gold mines, situated about eleven miles below El Plomo, Sonora, Mexico, the property of Brewster Cameron, L. H. Manning and Leo Goldsmith of Tucson, have been exploited by a syndicate of Englishmen, who will erect a sixty stamp mill and operate the property, the original owners retaining an interest.

The Corralitos track is now laid for ten kilometers out of Juarez, and as soon as the bridge gang has built the overhead crossing of the Mexican Central, the track layers will shoot out for the Corralitos country at the rate of a mile per day. The grading is completed for nearly fifty miles, and the contractors are building on as fast as possible. Chief Engineer Fewson Smith is sure the locomotive's whistle will be heard in Corralitos, in the State of Chihuahua, by next June.

The old Zubiata mine, nine miles east of Minas Prietas, in Sonora, has been worked for over one hundred years, and in that time has produced over \$15,000,000.

At a general meeting of the shareholders in the Coronas Mining Company, Limited, held on the 6th of January, it was decided to call another meeting on the 27th inst, at 3:30 P. M., at the offices of the company, La Calle de San Francisco, No. 14, so as to give time for the preparation of the accounts for the last year and Directors' Report to be presented to shareholders.

## NEVADA.

There are about forty men employed at the Adelaide Copper mine, near Golconda, Humboldt county.

## Kinsley Notes.

KINSLEY, NEV., Dec. 31, '96.

The little camp of Kinsley is 25 miles west of Deep Creek, in Nevada. Sergeant Kinsley discovered it in 1865, while looking for Indians, he being out with a company of Gen. Connor's command, and soon after John O'Doroughty, Judge Riley and others came here from Egan canyon. These old time miners were so well pleased with what they saw here that they put up a Welch roaster and took out some ore, but it would not smelt as there was not enough copper in it. From that time until the present more or less work has been done in the camp every year, and



some ore was shipped when the Dolie Varden smelter was running; and at this time a large amount of ore was taken from the Morning Star, that assayed 20 per cent lead and from 60 to 125 ounces in silver to the ton.

The Star people are now breaking down mineral which will be hauled by wagon to Tuano, from which place it will be shipped to Salt Lake by rail.

The Kinsley Mining Company, which is composed of Salt Lake people, among which are W. W. Chisholm, J. D. Kendall and Judge William Bradley, and Newton Dunyon and son, is the owner of a group of 18 patented claims in this district, on which it has done a large amount of work, and which it is still developing. The company has shipped 61 tons of high grade ore from this property, and at the present time it has about 100 sacks of ore on the dump, which will be marketed as soon as possible. The company also has about 300 tons of low-grade ore ready for shipment, if this country had railroad facilities, and if the road were only built into the Deep Creek country, it would leave a wagon haul of only 20 miles to the Kinsley mines.

Dollie Varden is 15 miles from Kinsley. This property was a rich property when silver and lead were up, and there was also a smelter at the mine; but one night the hands at the plant all got on a drunk, and in the morning it was found that the smelter had frozen up with a solid copper matte in it, which had to be chiseled out. The owners had no more money to invest, so that the plant has been closed down ever since.

H. J. FAUST.

A shipment has been made to Salt Lake from the Lyndon mine in Comet district, and owned by the Frudential brothers.

A remarkable deposit of silica, free from grit and almost absolutely pure, exists at a convenient point near Queen's Station on the line of the Carson & Colorado railroad. The demand for such an article is great, it being extensively used in making a preparation for pipe, boiler covering and fireproof plastering. This is one of the few existing deposits free from protoxide of iron. Shipments have been made east as far as Boston.

The *DeLamar Lode* says that it is rumored that the DeLamar company is negotiating for the Ash Springs in Pahranaagat valley, and that electricity will be generated therefrom for hoists and mills.

#### NEW MEXICO.

(Deming Headlight.)

Tres Hermanos.

M. C. Weaver is still pegging away at his claim, and from present indications feels confident that he has a good thing and he intends to push it along.

A. Beals is having some development work done on his property in this district, and the outlook is very flattering.

Owners of other properties expect to commence work in a short time, and it now looks as if the Tres Hermanos would soon be one of the leading camps in the county.

Cooks.

The advent of the new year has made few if any changes in the prospects of the camp. Messrs. Cotton and McDaniel, the owners of the Enterprise mine, are preparing to do some

extensive development work on their property. They have considerable quantities of ore now in sight, but they propose to do further prospecting in search of larger and richer ore bodies which are known to exist near by. They will commence work in earnest within a few days. When the new ore body is struck, which is only a question of time, they will employ a large force of miners.

Central.

The doings in this camp are much the same as usual, there being little or no change to record. The only event of any importance which has transpired in this vicinity lately, occurred on New Year's day; when the Texas company made a strike of exceedingly rich ore, at the depth of 252 feet. The vein is twelve inches wide, six inches of which carries gold plentifully. The ore is being sacked for shipment to Philadelphia, the headquarters of the company operating the property. The fact of rich ore being found at this depth demonstrates the fact conclusively that the mines here go down and increase in richness as depth is attained.

Lost Mine.

Charlton and Allen are working on a lease and they are extracting some good ore. They will have made a shipment of two tons of second class ore and one ton of first class ore to the Deming Smelter this week. The property is bonded to San Francisco parties who will organize a syndicate of English capitalists, who will, if they purchase the property, operate extensively. In the sale, if it goes, will be included properties belonging to H. J. Hutchison, F. Bellm and others.

Bear Mountain.

Something, in all probability, will be done in the near future with the extensive marble quarries located here, as enquiries have been made quite recently about them. A Chicago firm has offered to put the stone upon the market and to successfully introduce it, provided the owners would ship them a carload lot. The owners being poor, did not ship the marble for the simple reason that they could not afford to expend one thousand, or fifteen hundred dollars in building wagon roads and also that the philanthropists of the Windy city failed to come to their aid financially.

Pinos Altos.

The Mountain Key company is plodding along as usual and the Chilian mill is kept running pretty regularly. Progress in the mine is necessarily slow, as the large amount of water in the shaft and lower workings interferes materially. So far as cleaned out and retimbered the shaft and drills show up well.

The Treasure and Bell and Stephens' mines and mills are kept in constant operation, and the Mammoth and Stanley-Martin mills will, in all probability, be in operation before this appears in print. The Stanley-Martin mill will start up on a lot of ore from Whiskey Creek.

Anderson.

W. P. Dorsey, formerly known by the sobriquet of "Horn Silver Bill," is again in luck. About a year ago he located what was supposed to be a body of onyx, but upon in-

vestigation it proved to be even more valuable. Samples of the stuff were sent to New York City, and coming under the observation of Tiffany the jeweler, he wrote, informing Mr. Dorsey that the material was Fluorine, and that if it could be obtained in large sized pieces it would be worth from 25 cents to \$1.25 per pound. Mr. Dorsey forwarded a sample Monday morning for Mr. Tiffany's inspection. The piece sent was nearly twelve inches square, and weighed about thirty pounds. The find is situated in Anderson district, near the Box canyon, on the middle Gila, about three miles from Harper's ranch, and is on the east side of the river. Mr. Dorsey has two locations on the ledge, and he will do some work on his property this year.

#### Hillsboro Mines' Output.

The following is "The Advocate's" Annual statement, compiled from mill and smelter books and accounts:

Output of 1896.....	23,945 tons
Ounces Gold.....	16,613
Ounces Silver.....	76,506
Tons Copper.....	147
Total value of output of 1896.....	\$428,399.00
Average value per ton of output.....	\$17.87
Value of ore produced during past six years:	

1891—\$253,000	1894—\$432,680
1892—\$354,424	1895—\$489,598
1893—\$458,388	1896—\$428,399

#### Bland Notes.

T. W. Briggs resumed operations on the Monument mine January 1st.

The lessees of the Allerton put a gang to work on that property the first of the month.

Charles McCoy is working the Mollie Gibson, a valuable property in Colla canyon.

Theodore Heckman has a force of men at work on the Florence, developing for the lead.

Charles Graves has finished the assessment on the 63, which lies between the Albemarle and Victor mines of Colla canyon.

Messrs. Philpot, Smith and Greenfield finished the assessment work on the Wilson, a promising claim on Gold Hill, Dec. 31, '96.

The miners on the Good Hope have begun to crosscut the immense vein, which is considerably wider than seven feet, as at first reported.

Messrs. Frazier and Wilson finished the assessment work for 1896 on the Monte Carlo, which lies south of the Washington mine, and in the Noname group of claims.

While doing the assessment work on the Free Trade, one of the claims of the Lone Star group, the last of last month, an 18 inch vein of shipping ore was struck. The ore is of the same character as that in the Lone Star mine, which has been a steady shipper since operations first began, some three years ago. The vein is widening considerably and increasing in value with depth.—*Bland Herald-Weekly*.

The Little Mollie mine at Bland, formerly under bond and lease to George Marsh, of Santa Fe, and Thomas F. Abbott and W. D. Howard of Brand, has passed into possession of the first two gentlemen mentioned and Elmer A. Wixon, of Denver, who now constitute the owners of that valuable property, on which the owners are now pushing develop-



ment will begin shipping at an early date. A force of men went to work to run a 90 foot tunnel at the bottom of the gulch, to intersect the vein at the depth of 100 feet. Also, the same day, the richest strike was made on the Little Mollie in the upper tunnel, and consists of a body of very high grade ore, plastered with native silver and gold bearing. There are two discoveries of quartz on this property, the largest of which measures eight feet eight inches across. Besides the mining operations, the owners intend to build a house at the Little Mollie, to be occupied by the workmen.

#### Hillsboro Mines Output.

Output of Hillsboro gold mines for the week ending Thursday, January 7th, 1897, as reported for *The Advocate*:

	Tons.
Wicks.....	25
Butler.....	15
Richmond.....	75
Happy Jack.....	10
Snake Group.....	75
Opportunity.....	10
Sherman.....	25
Prosper.....	25
Eighty-five.....	20
Percha (silver-lead).....	20

Total..... 300

Total output since Jan. 1, 1897,— 300.

#### UTAH

(Extracts from Inter-Mountain Mining Review.)  
Bingham.

The Rogers concentrator is running through a 100-ton lot of Southern Chief ore.

The incline sunk on the vein of the Starlus is to be pushed down another hundred feet. The 100-level has been driven 100 feet eastward, and a fine streak of ore carrying native copper and black oxide has been encountered.

A shipment of ore running 58 per cent. lead, 10 per cent. iron and 12 ounces silver, has been made from the Snowbird by Jones & West. The Snowbird is situated in Markham Gulch, opposite the Montezuma, and on the same side as the Centennial which has produced considerable ore.

#### Park City.

Tim Sullivan, shift boss at the Silver King, has been advanced to the position of general foreman of the works, and Duncan Gillis has been made shift boss.

John Bogan, manager of the Bogan company, is making earnest efforts to effect a resumption of work in the shaft and hopes to be successful early in the new year.

At the Cumberland, the shaft being sunk from the tunnel level is down 250 feet, the power used being a gasoline engine. No prospecting has yet been done on the vein cut through at a higher point, the policy of the management being to get greater depth in the shaft before starting the search for ore.

The constant extraction of ore from the Valeo in the past three months has apparently made no impression on the ore body, and Mr. Dahlgreen stated this week that in all his experience in Park City he does not know of a vein that preserves the uniformity of size and values so well. Ex-Governor Thomas secured 221 shares of the stock last week at \$2 per share.

#### State Line District.

It is reported that the Burro company has arranged to have the ores treated at the Phoenix Reduction works at Bullionville, Nev., a move that will reduce the cost of transportation about 65 per cent.

The Rocky Mountain group has a tunnel in 165 feet and from this a winze was recently sunk which cut the ore body in a short distance. The ore averages \$300 per ton in gold and silver, while picked samples have been obtained running much higher.

On the property of the Fourteen company a shaft that was being sunk struck the ore at a depth of thirty feet, and at this depth \$127 gold values were obtained, while a picked sample showed 640 ounces silver in addition to the gold. The ore streak is about eighteen inches wide.

#### Tintic.

A new steam hoist has been ordered for the Tennessee Rebel by George Adams, and as soon as it arrives sinking will be resumed.

The values in the rick streak in the Mammoth appear to be increasing. The Mammoth Record reports a recent assay of 227 ounces gold to the ton.

The new compressor to run the machine drills in the Emerald shaft is in place, and was started up last month. The shaft will now be put down to the 700-level.

Thirty-six full cars of ore went out of Tintic in one day the last of last month, over the Rio Grande Western. The Union Pacific haul for the same day is not given.

From the strike recently made in the Little Willie, a fraction lying between the Eureka Hill and Centennial-Eureka, a sample carload has been shipped. If the ore pays, the Little Willie will be a constant shipper.

#### Camp Floyd District.

The officers of the Sacramento Mining company met January 1st and declared its second regular dividend of \$5,000, payable on the 15th of the present month.

From a gentleman who has just returned to Salt Lake City from Mercur it is learned that the Sacramento is looking "finer than silk," and every foot of development work that is being done in this property is being done in ore.

During the past few days a discovery has been made in this mine that discounts anything else that has been found since the first pick was struck into it, and this was when the men at work in this property opened up a 40-foot body of ore that is good mining, and which is really the nicest chute of mineral ever disclosed in this mine.

It is the intention of the company to increase the capacity of its plant at an early day, and it is the general understanding that when this is done the dividends will be increased also.

It is the general impression that the Sacramento is one of the most promising mines in Camp Floyd district. As it is the youngest dividend payer in the camp, and the indications are that it will open out into a mine as great as the Mercur, if not larger.

There was one time in the history of Mercur when it was believed that the adjoining ground was valueless, and the Sacramento ground was unoccupied long after the company began its first payments of dividends.

Now, however, this and other properties in the immediate vicinity of the Mercur give promise of developing into dividend payers that will equal this bonanza property in every respect.

In the Sunshine mine, at Sunshine, Camp Floyd District, a winze is being sunk from the bottom of the 700-foot incline for the purpose of cutting the ore body at that depth, and developments are also being pushed in other portions of the mine.

Secretary Ben T. Floyd, of the West Mercur Mining company, received an order for a block of 28,000 shares of the treasury stock of the company at 10 cents a share. The West Mercur is located on the west slope in Camp Floyd district, just south of the Sego Lily, which adjoins the Daisies, on which it is stated DeLamar has just secured a bond for \$70,000.

## GENERAL NEWS.

The Hercules Gas Engine works has just completed and shipped a 25 H. P. stationary engine to Randsburg, where it will be used to run a 10-stamp mill, rock breaker and concentrator. The engine is of a new type equipped with distillate attachment and Corliss engine governor, which gives more perfect control than any other governor yet used on gas engines.

According to the report of the Bureau of Statistics of the United States, the exports of gold and silver for October, 1895 and 1896, and for ten months ending October 30th, 1895 and 1896, were as follows:

	October.	1896.	1895.	Ten Months Ending October.	1896.
Gold—					
Imports.....	\$1,797,040	\$27,061,088	\$30,636,970	\$22,849,939	
Exports.....	1,873,897	343,168	76,064,179	55,913,569	
Silver—					
Imports.....	1,391,891	993,440	9,372,495	9,448,077	
Exports.....	4,804,447	4,704,339	48,269,067	81,235,380	

The Rawhide Mining company has placed an order with the Hercules Gas Engine works for an 80 H. P. single cylinder horizontal gasoline or distillate engine, which will be used to run the cornish pumps. Plant will be installed and in running order in about 30 days. As electricity has been heretofore used at the "Rawhide" the installation of this new engine marks a new era in power for mining purposes and shows the great advance made by the builders of these engines.

#### Biggest Casting Yet.

A. Kratzmer cast at his foundry at Bakersfield late on Monday night, January 11th, the largest piece of iron ever melted and poured into one mould in Kern county. This big casting is a mortar for a five-stamp quartz mill and is certainly a jumbo. Moreover, it is the finest casting of this size and character ever attempted there. The moulders were busy all Saturday and Monday preparing for the huge casting, whose weight is 3000 pounds. It will undoubtedly go either to Randsburg or Greenhorn. It is not unlikely that other heavy mining machinery may be cast there in the near future. Those requiring machinery of this kind are not slow to discover that castings as good as those made in San Francisco can be made in Bakersfield at San Francisco prices, and no freight to pay on patterns or castings.



## Smelter Returns.

In the New Year's issue of the *Rocky Mountain News* there is a complete statement of the output of the big smelting establishments of the west, as follows:

NAME OF PLANT.	GOLD.	SILVER.	LEAD.	COPPER.	TOTALS
Omaha-Grant, Denver.....	\$ 3,036,084	\$ 3,423,853	\$ 747,037	\$ 21,038	\$ 7,228,012
Omaha-Grant, Durango.....	841,158	646,009	104,968	52,943	1,145,078
Philadelphia, Pueblo.....	2,161,950	4,433,627	1,380,169	363,683	8,340,429
Consolidated, Kansas City.....	4,166,121	10,344,163	2,354,710	488,257	17,358,251
American, Canyon City.....	43,300	99,642	*135,000	73,436	351,279
Globe, Denver.....	1,427,906	3,002,536	778,467	81,858	5,490,566
National, Chicago.....	4,217	11	.....	.....	4,228
Boston-Colorado, Denver.....	1,238,526	796,112	.....	374,200	2,408,838
Colorado, Pueblo.....	739,717	1,999,686	662,121	78,647	3,480,171
Silverton, Silverton.....	140,422	227,800	.....	198,000	566,222
Branch mint, Denver.....	4,218,862	27,373	.....	.....	4,246,235
El Paso works, Gillett.....	455,277	.....	.....	.....	455,277
Metallic Extraction, Cyanide.	620,100	.....	.....	.....	620,100
Burlingame, Denver.....	865,844	.....	.....	.....	865,844
St. Louis assay office.....	7,899	97	.....	.....	7,996
Mint, Philadelphia.....	207	3	.....	.....	210
Totals.....	\$19,468,590	\$25,000,712	\$6,362,472	\$1,932,062	\$52,563,846

\*Canyon City smelter returns \$135,000 for zinc.

## Electric Smelting of Iron and Steel.

The all-pervading conquest of electricity seems likely with another year to take over yet another important branch of industry. In this country, in France and in Sweden, at least three well known inventors have taken out patents for electric furnaces for the smelting of iron and steel and, it is understood, that in the last-named country the process is about to be put into effect on a large scale. There Dr. De Laval has secured one side of the falls of Trollhatten and has organized a large company to exploit his invention. At Nauhausen M. Herault, the inventor of the electric aluminum process, known under his name, and under which the larger part of the aluminum of Europe is manufactured, has also devised an electrical smelter, and claims to have secured admirable results therefrom, although no definite figures have yet been given out. In this country Joseph A. Vincent, of Philadelphia, has taken out letters patent of an exceedingly simple smelting furnace which has received high commendation from those who have examined it, and for which the inventor likewise claims high efficiency.

Briefly described, the furnace consists of an oven containing a pair of electrodes supplied with a powerful current, the ore being driven between the latter by means of a rotary screw, and the smelted material caught in a plunger below. The body of the furnace is formed of refractory material, such as fire-brick, and is provided with a vertical channel or hearth, open at the bottom and terminating at the top in a neck, leading to a feeding device adapted to positively force the material to be smelted into the hearth.

This feeding device consists of a chamber or hopper into which the material, after its first being finely pulverized, is delivered, and a screw or mechanical propelling device standing vertically in the hopper, and extending into the discharge neck, which opens into the hearth below. By turning this screw the materials from the hopper are forced with a steady pressure into the hearth. The floor, or bottom of the latter consists of a table of refractory material mounted on a piston working within a hydraulic cylinder. The lower end of the cylinder connects by pipe with a stand pipe, which has sufficient height to create a pressure upon the under side of the piston, and thus uphold the bottom of the hearth to the desired point. An ingenious automatic device with a float valve con-

trols the action of this piston. Opening transversely into the hearth, and substantially of the same width as the latter, are two flues, arranged diametrically opposite, through which the electrodes are thrust. These electrodes are of carbon upon roller carriages running upon rails. These carriages are moved to and fro by means of screws and an electrically controlled power device. The latter are a pair of electro-magnetic governors, operating in such a manner that when the resistance across the electrodes is abnormal, due to the burning away of the electrodes, the governors come into operation to push the electrodes toward each other, thus insuring the proper maintenance of the arc at all times.

By means of a pair of pulleys, operated mechanically, when sufficient current passes through a by or shunt circuit, the magnet shifts the belt until the electrodes are drawn sufficiently near together. The current in the main circuit then increases and a spring shifts the belt again and the electrodes remain stationary. Several modifications of the device are also provided for to meet varying requirements for different conditions. In operation the material is fed down between the electrodes in the hearth, under the positive action of the screws. As the pulverized material is smelted the product sinks upon the piston-supported floor. Under a sufficient pressure the latter sinks, thus allowing a continual stream of fresh material to be brought within the zone of fusion between the electrodes, and without interfering with the continuous operation of the furnace.

It is evident that with a furnace constructed in this manner the ingot of smelted material may be of great length by simply providing a piston cylinder sufficiently long. When the floor is fully lowered the ingot may be removed from the space below the hearth. The production of combustion and gases generated in the process of smelting escape by a flue extending laterally from the hearth and leading to a chimney above. This smelter, like both of the others, is especially designed for localities where coal and coke are expensive and cheap power from a waterfall or culmbank is to be had. At the present time the seat of the iron and steel industries is approximately at the meeting place of cheap fuel and cheap ore, and notably where these exist side by side. Deposits of iron ore, however, very frequently occur at long distances from coal areas, and the cost of trans-

portation naturally lessens the profit of the mines. It does not now seem probable that the electric smelter will come into general use where coal is to be had cheaply and in abundance; but it may prove an immense boon to other iron producing localities where this is lacking.—*Salt Lake Herald*.

The estimated output of gold and silver by states, as reported by the *Rocky Mountain News* of Denver, is as follows:

	Gold.	Silver.
Alaska.....	\$ 3,250,000	\$ 100,000
Arizona.....	4,000,000	700,000
California.....	17,000,000	250,000
Colorado.....	16,500,000	12,057,952
Georgia.....	150,000	4,000
Idaho.....	2,800,000	2,500,000
Michigan.....	50,000	15,000
Montana.....	4,500,000	10,000,000
Nevada.....	2,000,000	500,000
New Mexico.....	2,000,000	400,000
North Carolina.....	40,000	5,000
Oregon.....	2,250,000	15,000
South Carolina.....	150,000	1,500
South Dakota.....	4,500,000	75,000
Texas.....	.....	250,000
Utah.....	1,877,920	5,843,868
Washington.....	400,000	100,000
Wyoming.....	250,000	.....

Total \$61,717,926 \$32,817,320

The gold production of the country in 1894 was placed by the mint at \$39,500,000. In 1895 it rose to about \$48,000,000. The figures above indicate a gain of more than 25 per cent. during the year just closed. The production for 1896 is \$22,217,820 more than in 1894. To this Colorado contributes, roundly, \$7,000,000, the production in that state in 1894 being \$9,549,731, as against \$16,500,000 in the year just closed.

## PERSONAL—NEWS ITEMS

General Manager P. T. Farnsworth, of the Austin Mining Co., left Battle Mountain, Nev., for Austin, the county seat of Lander county, January 5th.

Hon. A. W. McCune, of Salt Lake City, Utah, left the fore part of the month for the Kootnay country, in British Columbia, where he has large and valuable mining interests.

I. N. Bradbury has just returned from the Virginia Dale district, out from Banning, Cal., where he has been doing assessment work on some of his claims.

G. S. Moore left Battle Mountain, Nevada, for the Adelaide copper mine near Golconda, to accept the position as blacksmith from the company.

Carl Haller, the Royal Mining and Mechanical Engineer of Germany, was a caller at the JOURNAL office the 13th inst. Mr. Haller has just returned from an extended visit to Mexico, and did not have time to visit our mining sections before his return to Chicago, Ill., where he has made his headquarters since the opening of the Columbian Exposition in 1893.

Jack Shelly, an old timer of Bland, N. M., and a first-class miner, returned to the above city from Cerrillos the last of December.

Thomas Whitto, a mining man of Soulsbyville, was among last week's visitors to Sonora.

J. R. Boner, of Kingman, Ariz., has gone to Phoenix, Ariz., on mining business.

James H. Garrison, of Randsburg, Cal., is visiting some friends in Santa Ana, Cal.

Mike Powers came down to Bland, N. M., from Cerrillos the first of the year to secure a position on the Lone Star mine in the Cochiti district.

J. F. Stevens of Fresno, Cal., will start a stage route from Mojave to Randsburg in a few days.



A. McDonald, the Superintendent of the Bellevue mine near Sonora, Cal., returned from San Francisco the last of December. He intends making a trip to British Columbia very shortly.

R. S. Philpot, who has been in this city for some time on business, has returned to Bland, N. M., where he has some mining interests.

Joseph Tribble, of Kingman, Ariz., has gone to Randsburg Cal.

W. C. Doolittle arrived in Phoenix, Ariz., Monday, January 4, from Clarendon, Michigan, and will in a few days go to Humbug, where he will take a position on the mill of the Humbug Mining company.

E. Downing, of Visalia, was in Bakersfield, January 13th on mining business.

J. H. Cohenour, of Kingman, has gone to Randsburg, where he will look into the possibility of supplying the town with water.

Mr. E. B. Wann, the Denver mining expert, arrived in Phoenix, Ariz., Monday morning, January 4th, to look after some mining properties in that portion of the Territory in which he is interested.

John M. Crawford left Randsburg for Bakersfield, Cal., last week.

Capt. Pier, a Denver mining expert who has been spending the past two or three weeks in the country adjacent to Randsburg, is now inspecting the mines along the Colorado river in the neighborhood of Needles. There's a great deal for a mining man to look at in that country.

Dr. Helm, of Phoenix, Ariz., has gone to San Francisco, Cal., where he will meet a syndicate of capitalists, who will probably invest in Arizona properties.

Judge Wynn has returned from Bakersfield to Randsburg, Cal., where he is interested in mining.

Richard Gird, who went to Southern Mexico the latter part of October with Wilbur Parker, of this city, to examine some mining property, will return home about the middle of January.

Robert Duncan, Jr., superintendent of the Alaska Treadwell properties, paid San Francisco a visit the middle of last month.

Stephen Peck, the St. Louis capitalist who is interested in some mining property near Casa Grande, Arizona, arrived in Phoenix, Monday, January 4th.

F. H. Mills, of Calumet, Mich., is now the Superintendent of the Merced Gold Mining Co., at Coulterville, California.

A. P. Granger, the Denver mining man, who is interested in some mines near Bumble Bee, Ariz., arrived in Phoenix the 4th inst.

Chas. Butters, manager of the Rand Central Ore Reduction company, of South Africa, is on his way from New York to California, and is expected in San Francisco on the 15th inst.

Charles Thomas, one of the discoverers of the famous La Fortuna mine in Arizona, has struck a fine prospect at Stien's Pass.

Russell L. Dunn, who left San Francisco in August for Siberia, to examine and report upon some gravel properties for a Parisian syndicate, was at last mail dates at Gorbizta, on the Chilka river, a branch of the Amoor, in Siberia.

J. H. Canovan, for a number of years superintendent of the Old Dominion Smelter, at Globe, Ariz., is now in Phoenix.

Marcus Daly is going to Mexico in the near future to look up some mining property in which he is interested.

R. E. Moore, who is interested with Mr. Mergenthaler, the inventor of the type setting machines, in the Butte mine near Jerome, Ariz., was in Phoenix January 3d.

Emile M. du Marias, a noted French mining engineer of Paris, is visiting Utah mining districts in the interest of French capital.

E. L. Davis, one of the foremen of the Arizona Copper company's works, at Clifton, Ariz., who has been quite sick for a month past, left Clifton, Jan. 5th, in company with Bud McLean for St. Louis, to recuperate for a while.

James A. Pollock, of Salt Lake City, Utah, who was here the last of December, was in San Francisco, Cal., the 9th inst.

John N. Iagrig and N. B. Brown were in Tucson, Arizona, January 5th, from Casa Grande, and report that a boom has struck the latter place.

P. George Gow has resigned the Pacific Coast agency of the Gold and Silver Extraction Company of America, Limited, and will in the future devote his attention to mining business.

J. J. Riley, of Cherry Creek, near Prescott, Ariz., has gone to San Francisco, Cal., to purchase a mill for his property.

See the "Want ad," page 18.

Charles Olsen and C. W. Anderson, miners, left Phoenix, Ariz., the fore part of the month for Lower California, where they have some promising claims.

W. W. Hill, the superintendent of the Black Warrior Copper Co.'s property, near Globe, Ariz., was in Phoenix the fore part of this month on mining business.



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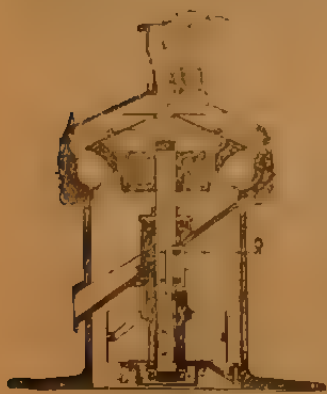
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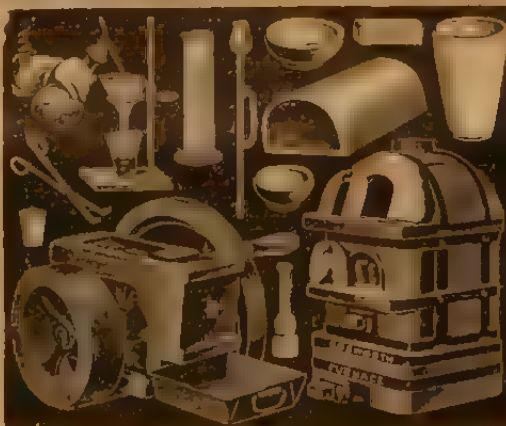
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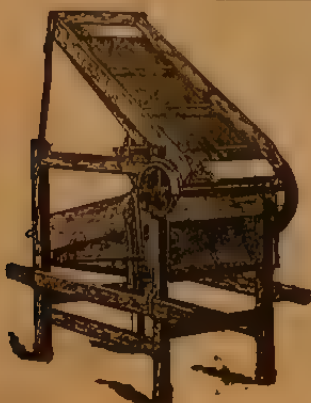
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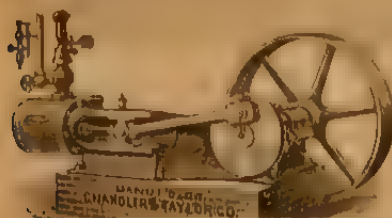
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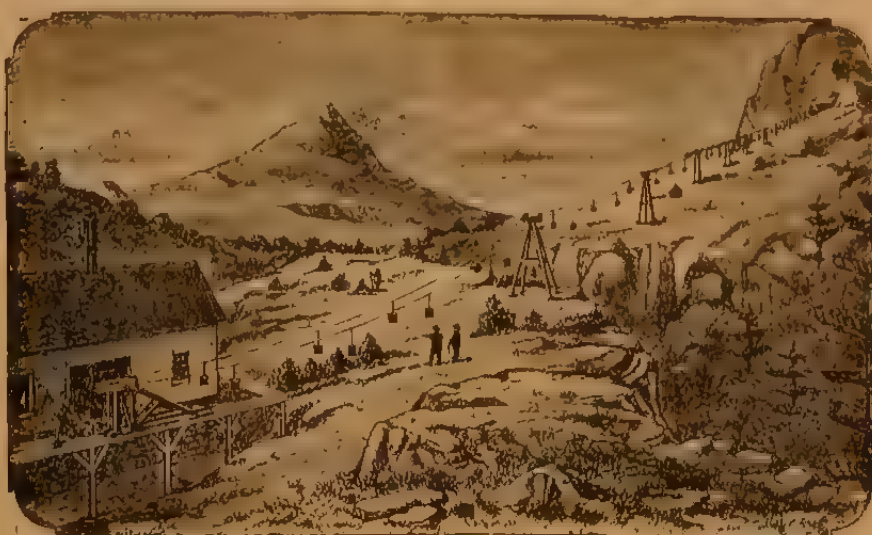
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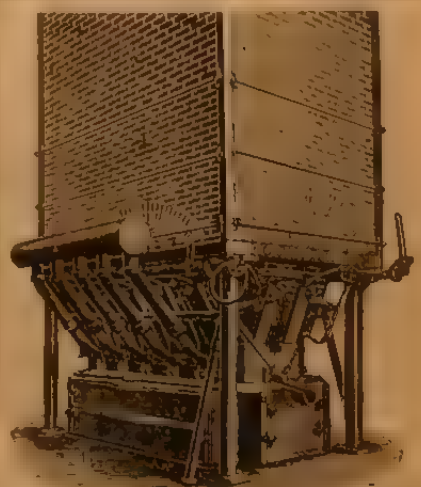
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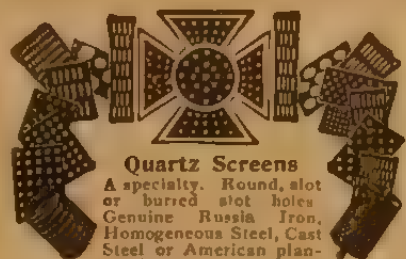
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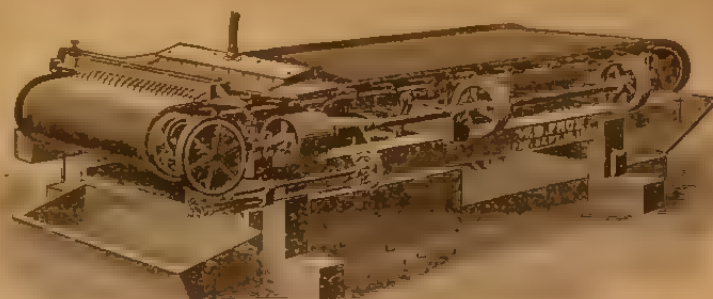
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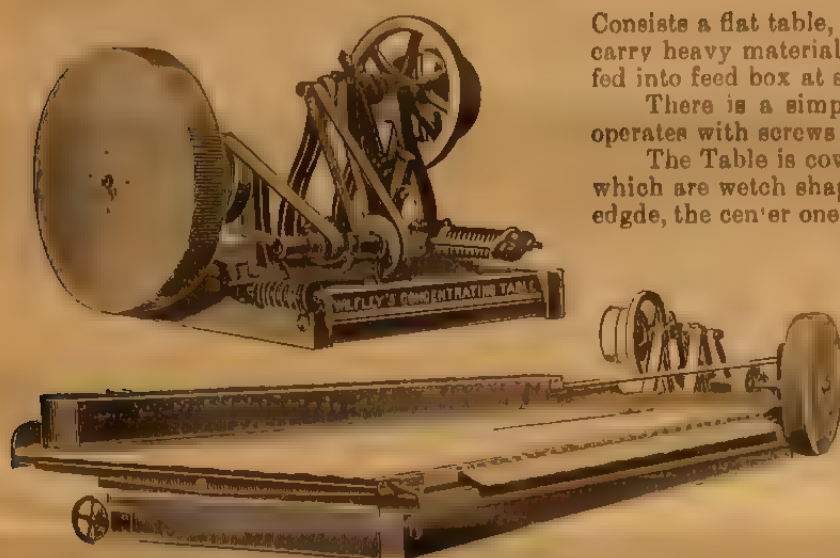
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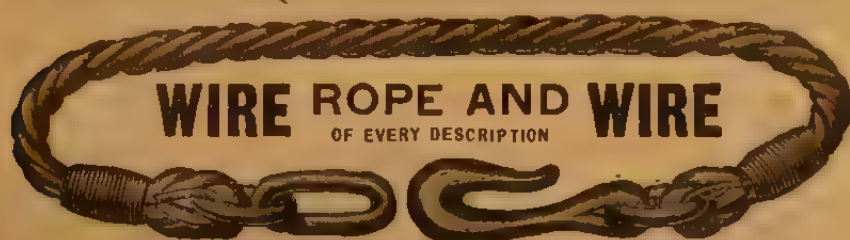
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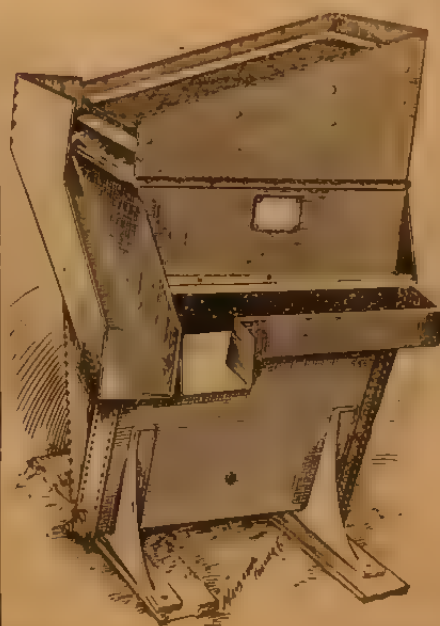
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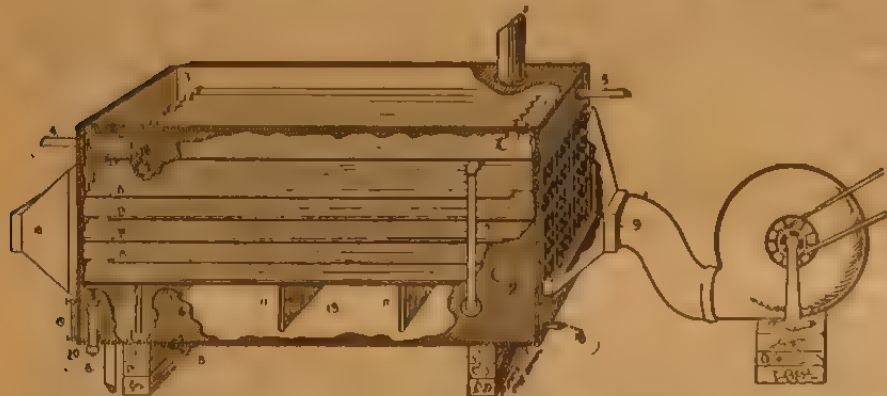


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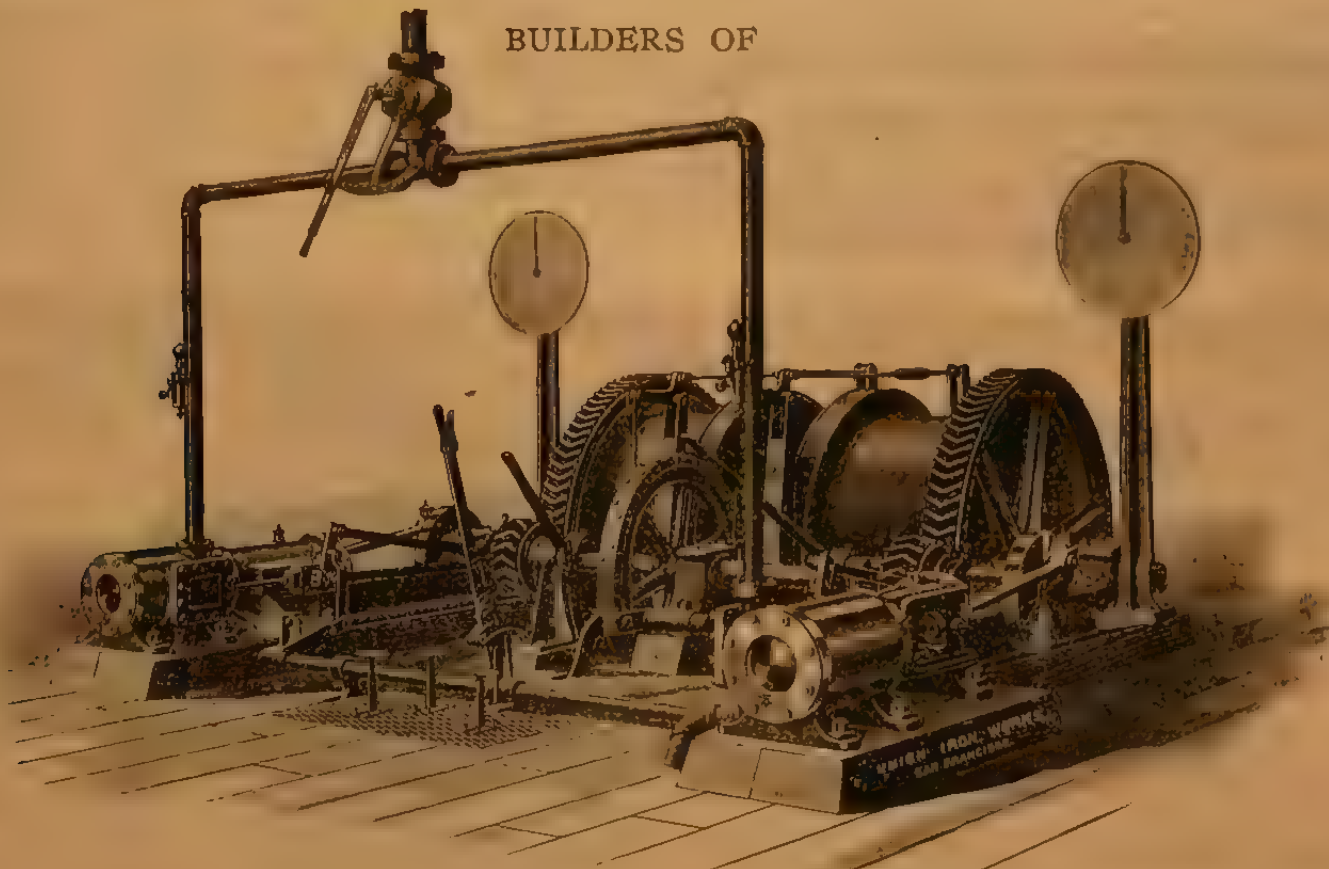
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" 4	64 1/2	11 50	3 05
" 6	64 1/2	11 45	3 02
" 8	64 1/2	11 45	3 02
" 10	64 1/2	11 45	3 02
" 12	64 1/2	11 35	3 02
" 14	64 1/2	11 30	3 00
" 16	65	11 25	3 00

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Atlantic	16 00	Kearsarge	10 00
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Butte & Boston	1 50	Quincy	100 00
Cal & Helena	300 00	Tamarack	75 00
Centennial	2 00	Wolverine	8 50

## COLORADO SPRINGS STOCKS

Aetna	01	Insley	008 1/2
Alamo	00 1/2	Ironclad	00 1/2
Anaconda	1 19	Isabella	42
Argentum Mariana	49 1/2	Jack Pot	08
Bangkok-Corn Belle	02 1/2	Jefferson	11 1/2
Bankers	14	Keystone	08
Ben Hur	01	Marion	31
Bob Lee	02	Matos	18 1/2
C & N	01 1/2	Mollie Gibson	58
C C & Manitou	04	Monarch	05 1/2
Creede & C C	05 1/2	Mount Rosa	18 1/2
Cresus	01 1/2	Oriole	02 1/2
C C Consolidated	16 1/2	Orphan Bell	11 1/2
Des Moines	02 1/2	Pharmacist	1 26
Fannie Rawlins	07 1/2	Peoples	09 1/2
Favorite	10	Sacramento	08 1/2
Franklin	01 1/2	Specimen	08 1/2
Garfield Grouse	09 1/2	Star of the West	00 1/2
Golden Eagle	02 1/2	Trachyte	02 1/2
Golden Fleece	80	Union Gold	28
Gold & Globe	10 1/2	Virginia M	03
Gold Standard	05 1/2	Work	08 1/2
Humboldt	02		
Ingham C.	10		

## DENVER STOCK REPORT.

Aetna	01	Elkton	1 50
Alamo	00 1/2	Eureka	009
Anaconda	1 24	Garfield Grouse	08 1/2
Arcadia	004	Golden Fleece	80
" Consolidated	10	Goldsmith	008 1/2
Argentum Jun- ata	48 1/2	Gold Standard	05 1/2
Bangkok-C-Bell	02 1/2	Insley	009 1/2
Bankers	14 1/2	Iron Clad	08 1/2
Ben Hur	01	Isabella	42
Bob Lee	02	Jack Pot	08
Boston & C C	01 1/2	Jefferson	11 1/2
Chimbarazo	01 1/2	Mollie Gibson	58
C & N	12	New Zealand	08 1/2
Colo. C & M	04 1/2	Peoples	09 1/2
C C Con	18 1/2	Pharmacist	18 1/2

## HELENA, MONTANA

Alice	25	Granite Mount	1 05
Bald Butte	2 55	Hope	1 50
Benton Group	10	Iron Mountain	42
Bi-Metallic	3 00	Ontario	1 00
Elizabeth	10	Poorman	40

## NEW YORK.

Crown Point	45	Sierra Nevada	85
Con. Cal. & Va.	1 00	Standard	2 75
Gould & Curry	80	Union Con	68
Hale & Norcross	1 25	Iron Silver	10
Homestake	80	Quicksilver	3 00
Mexican	50	Quicksilver pld	17 02
Ontario	14 50	Bulwer	25
Ophir	1 30	Yellow Jacket	35
Plymouth	20	Deadwood	45

## SAN FRANCISCO.

Alta	10	Monro	15
Belcher	37	Nevada Queen	50
Best & Belcher	95	Ophir	95
Bodie Con	25	Potosi	85
Chollar	2 25	Savage	75
Con. Cal. & Va.	1 00	Sierra Nevada	85
Crown Point	45	Union Con	68
Hale & Norcross	1 25	Utah	11
Mexican	50	Yellow Jacket	35
Gould & Curry	80	Bulwer	25

## ST. LOUIS.

American Nettle	25	Elizabeth	20
Granite Mt.	1 50	Leo	3
Adams	80	Hope	1 40
Bi-Metallic	3 20	Small Hopes	80

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Ajax	80	Horn Silver	2 05
Alliance	35	Little Pittsburg	01 1/2
Am. Nat. G's	00 1/2	Lucky Hill	22 1/2
Anchor	1 25	Mammoth	2 00
Bogan	15	Mercur	8 15
Bull. Beck	8 00	Ontario	10 00
Cent. Eureka	75 00	Rover	27 1/2
Dalton	02 1/2	Silver King	17 25
Daly	7 50	Sioux Con	95
Daly West	8 50	Swansea	2 40
Four Aces	20	So Swansea	1 00
Gaucha	1 80	Tetro	08
Geyser	1 00	Utah	1 45

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Name of Company	State	Price
Angustias	Guanajuato	\$ 400
Asturians & Anexas	Zacatecas	440
Cerro Colorado	Chihuahua	10
Concepcion y Anexas	S. Luis Potosi	80
El Oro	Guanajuato	80
do pre.		00
Luz de Borda	Michoacan	30
do Free stock		30
Luz de Maravillas	Hidalgo	110
Real del Monte		850
Rosario y Anexas	Durango	70
do pref.		50
San Rafael del Oro	Guanajuato	90
Sta. Gertr. y Anexas	Hidalgo	187
do Free stock		301
Ste. Maria de la Paz	S. Luis Potosi	505
Tlaxiogo	Puebla	00
Zomelahuacan (gold)	Vera Cruz	01
Zona Min de Pozos	Guanajuato	105

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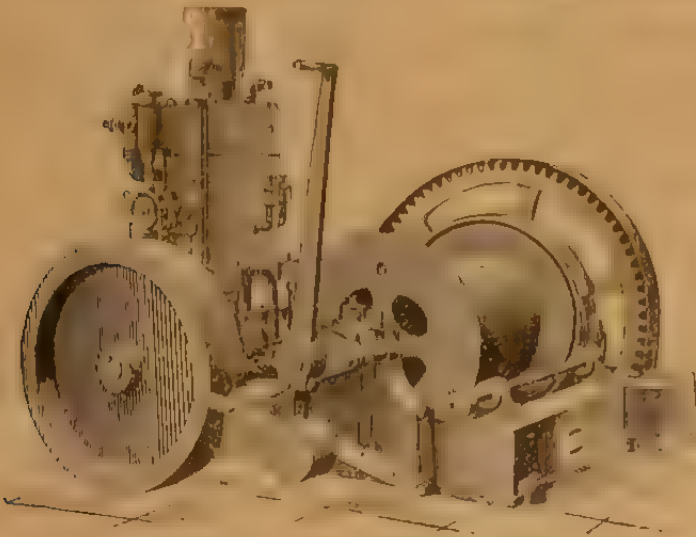
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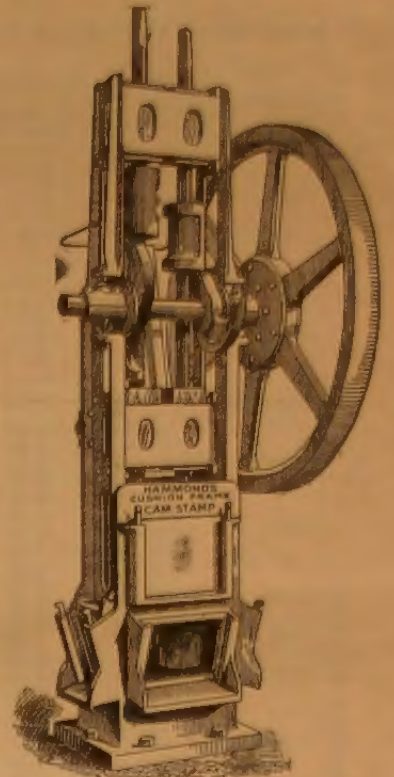
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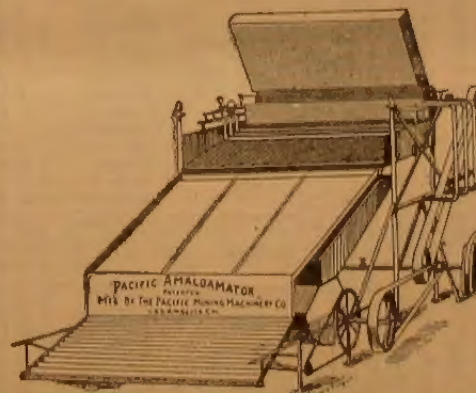
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		Pueblo 4.00	5.50	7.50	
		Denver 5.50	7.00	9.00	
		Kansas City 6.00	7.50	9.50	
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		Pueblo 3.50	5.00	7.00	
		Denver 5.00	6.50	8.50	
		Kansas City 5.50	7.00	9.00	
Steins Pass, N. M.	El Paso 1.50	3.00	5.00		
		Pueblo 3.00	4.50	6.50	
		Denver 4.50	6.00	8.00	
		Kansas City 5.00	6.50	8.50	
Lordsburg, " "	El Paso 1.00	2.50	4.50		
		Pueblo 2.50	4.00	6.00	
		Denver 4.00	5.50	7.50	
		Kansas City 4.50	6.00	8.00	
Silver City, " "	El Paso .75	2.25	4.25		
		Pueblo 2.25	3.75	5.75	
		Denver 3.75	5.25	7.25	
		Kansas City 4.25	5.75	7.75	
Hudson, " "	El Paso .50	2.00	4.00		
		Pueblo 2.00	3.50	5.50	
		Denver 3.50	5.00	7.00	
		Kansas City 4.00	5.50	7.50	
Deming, " "	El Paso .25	1.75	3.75		
		Pueblo 1.75	3.25	5.25	
		Denver 3.25	4.75	6.75	
		Kansas City 3.75	5.25	7.25	
Florida and Lake Valley, " "	El Paso .25	1.75	3.75		
		Pueblo 1.75	3.25	5.25	
		Denver 3.25	4.75	6.75	
		Kansas City 3.75	5.25	7.25	
Nott, " "	El Paso .25	1.75	3.75		
		Pueblo 1.75	3.25	5.25	
		Denver 3.25	4.75	6.75	
		Kansas City 3.75	5.25	7.25	
El Paso, " "	El Paso .25	1.75	3.75		
		Pueblo 1.75	3.25	5.25	
		Denver 3.25	4.75	6.75	
		Kansas City 3.75	5.25	7.25	
Las Cruces, " "	El Paso .25	1.75	3.75		
		Pueblo 1.75	3.25	5.25	
		Denver 3.25	4.75	6.75	
		Kansas City 3.75	5.25	7.25	
Rincon, " "	El Paso .25	1.75	3.75		
		Pueblo 1.75	3.25	5.25	
		Denver 3.25	4.75	6.75	
		Kansas City 3.75	5.25	7.25	

FROM

TO

Car Loads in dollars and per ton of 2,000 lbs.

Ore Concentrator.

Valuation not to exceed \$50 per ton.

Valuation not to exceed \$100 per ton.

Valuation not to exceed \$500 per ton.

Lead Bullion, valuation not to exceed \$100 per ton.

Base Metal, Copper Matte, Bar and Black Copper, valuation not to exceed \$300 per ton.

A. T. &amp; S. F. R. R.

ATLANTIC &amp; PACIFIC RAILROAD

Flagstaff, A. T.	El Paso 6.50	8.00	10.00		
	Pueblo 7.50	9.00	12.00		
	Denver 9.00	10.50	13.50		
	Kansas City 9.50	11.00	14.00		
Peach Spgs, Hackberry, " "	El Paso 7.50	9.00	11.25		
	Pueblo 8.50	10.00	12.25		
	Denver 10.00	11.50	13.75		
	Kansas City 10.50	12.00	14.25		
Kingman, " "	El Paso 7.50	9.00	11.25		
	Pueblo 8.50	10.00	12.25		
	Denver 10.00	11.50	13.75		
	Kansas City 10.50	12.00	14.25		
Yucca, " "	El Paso 7.50	9.00	11.25		
	Pueblo 8.50	10.00	12.25		
	Denver 10.00	11.50	13.75		
	Kansas City 10.50	12.00	14.25		
Needles, Cal.	El Paso 7.75	9.25	12.00		
	Pueblo 8.75	10.25	13.00		
	Denver 10.25	11.75	14.50		
	Kansas City 10.75	12.25	15.00		
Fenner, " "	El Paso 8.25	9.75	12.75		
	Pueblo 9.25	10.75	13.75		
	Denver 10.75	12.25	15.25		
	Kansas City 11.25	12.75	16.25		
Bagdad, " "	El Paso 8.50	10.00	13.75		
	Pueblo 9.50	11.00	14.75		
	Denver 11.00	12.50	16.25		
	Kansas City 11.50	13.00	17.25		
Daggett, " "	El Paso 9.00	10.50	14.50		
	Pueblo 10.00	11.50	15.50		
	Denver 11.50	13.00	17.00		
	Kansas City 12.00	13.50	18.00		
Barstow, " "	El Paso 9.50	11.00	15.75		
	Pueblo 10.50	12.00	16.75		
	Denver 12.00	13.50	18.25		
	Kansas City 12.50	14.00	19.25		
Kramer, " "	El Paso 10.00	11.50	16.75		
	Pueblo 11.00	12.50	17.75		
	Denver 12.50	14.00	19.25		
	Kansas City 13.00	14.50	20.25		
Mojave, " "	El Paso 10.50	12.00	17.75		
	Pueblo 11.50	13.00	18.75		
	Denver 13.00	14.50	20.25		
	Kansas City 13.50	15.00	21.25		

## Rates on Copper or Zinc Ore to Canon City.

Taking Effect July 1st, 1891.—So far as rates on Copper or Zinc Ores are concerned, Canon City, Col., will be considered as common with Pueblo; in other words the rates shown in Tariff as applying on shipments of Ore to Pueblo, will also apply on shipments of Copper or Zinc Ore to Canon City.

In the absence of positive information as to the value of Ore, Ore Concentrations, or Base Metal, Agents will bill at rates sufficiently high to protect the Company. These rates can be corrected when evidence of actual value is produced.

The market price at destination, to be verified by assays made

by the Railroad Company, at owner's expense, will govern the value and determine the rate.

Agents must cause shippers to understand the condition upon which these rates are based, and should make their receipts read: "Rates subject to correction according to value at destination."

These rates only apply on lots of ten tons or over. On lots of four tons and under ten, 20 per cent, and on lots of one ton and less than four, 40 per cent will be added to above rates. Base Metal, Copper Matte and Ore Concentrations, in lots of less than one ton, will take first-class rates from all the above points, except when the rate based on valuation makes it higher, that rates on small lots of high value may not be less than the rates when in lots of one ton or over as above.

Charges on Ore in car-loads must be guaranteed, and on lots less than a car-load must in all cases be prepaid.

Omaha Rates.—The Rates to Omaha, Neb., all grades, will be \$1 per ton higher than the rates to Kansas City.

Note.—All shipments of Ore and Concentrations valued not to exceed \$50 per ton must be billed at the rate for Ore and Concentrations, "Valuation over \$50 not to exceed \$100 per ton," and shipping receipt must be issued by agent at said rate. Agent at destination is authorized to correct the rate for Ore and Concentrations, "Valuation not to exceed \$50 per ton," upon presentation of properly certified smelter returns, showing that the value does not exceed \$50 per ton.

Intermediate points not named will take rates provided for next station beyond.

## SOUTHERN CALIFORNIA RAILWAY.

Rate on Ore in car loads, valuation not to exceed \$50 per ton, minimum weight 24,000 lbs. Oro Grande, Cal., to Pueblo, Col., \$10.30 per ton.

Same, Victor, Cal., to Pueblo, \$10.35 per ton.

Ore, car loads, when coming from the Republic of Mexico valuation not to exceed \$50 per ton; San Diego or National City to Denver, Col., and Pueblo, Col., \$12 per ton of 2,000 lbs.

Ore, valuation not to exceed \$500 per net ton and so receipted for, minimum weight 30,000 lbs. 75c per 100 lbs. to Denver and Pueblo, Col., from all points on the Southern California Railway.

## ORE TARIFF.

From Points in New Mexico, Arizona and California, to  
El Paso, San Francisco and Vallejo Junction.

## SOUTHERN PACIFIC R. R. COMPANY.

FROM	TO	Valuation not to exceed \$50 per ton.			
		Valuation not to exceed \$50 per ton.	Valuation not to exceed \$100 per ton.	Valuation not to exceed \$500 per ton.	Lead Bullion, Copper Matte, Bar and Black Copper, value not to exceed \$300 per ton.
El Paso, Tex.	San Francisco	\$9.10	\$9.10	\$9.10	11.20
Deming, N. M.	San Francisco	2.00	2.00	2.00	2.20
Gage, " "	San Francisco	2.00	2.00	2.00	2.20
Separ, " "	San Francisco	2.00	2.00	2.00	2.20
Lordsburg, " "	San Francisco	2.50	2.50	2.50	2.80
Steins Pass, " "	San Francisco	2.50	2.50	2.50	2.80
Bowie, A. T.	San Francisco	3.00	3.00	3.00	3.40
Willcox, " "	San Francisco	3.00	3.00	3.00	3.40
Dragoon Summit, " "	San Francisco	3.00	3.00	3.00	3.40
Benson, " "	San Francisco	3.50	3.50	3.50	3.80
Tucson, " "	San Francisco	3.50	3.50	3.50	3.80
Casa Grande, " "	San Francisco	4.00	4.00	4.00	4.40
Maricopa, " "	San Francisco	4.00	4.00	4.00	4.40
Gila Bend, " "	San Francisco	4.00	4.00	4.00	4.40
Aztec, " "	San Francisco	4.00	4.00	4.00	4.40
Gila City, " "	San Francisco	4.00	4.00	4.00	4.40
Yuma, " "	San Francisco	4.00	4.00	4.00	4.40
Newhall, Cal.	San Francisco	4.00	4.00	4.00	4.40
Mojave, " "	San Francisco	4.00	4.00	4.00	4.40
Caliente, " "	San Francisco	4.00	4.00	4.00	4.40
Milton, " "	San Francisco	4.00	4.00	4.00	4.40
Hollister, " "	San Francisco	4.00	4.00	4.00	4.40

Rates marked thus (\*) apply on Carloads ONLY, other rates apply only on lots of twelve tons or over. On lots of four tons and under twelve, 20 per cent; and on lots of one ton and less than four 40 per cent will be added to the above rates.

Vallejo Junction takes same rate as San Francisco.



# THE PUEBLO Smelting and Refining Company,

PUEBLO, COLORADO.

BUYERS OF  
Gold, Silver, Lead and Copper Ores,  
Copper Matte and Bullion.

## Refiners of Gold, Silver, Lead and Copper.

Manufacturers of Bar and Pig Lead, Lead Pipe, Antimonial Lead, Copper Ingots,  
Granulated Test Leads and Litharge.

Pays Highest Prices for all classes of Ores.

Especial Attention to Sampling by most Approved Processes.

Quick Returns on all Consignments.

### KENDALL GOLD & SILVER EXTRACTION COMPANY

THE KENDALL PROCESS is the most efficient method of using cyanide for the extraction of precious metals from their ores: wherever the process has been adopted the result has been increased, percentages of values recovered and saving of time; material reduction in consumption of chemical has also been demonstrated with respect to several classes of ores.

All ores, without exception, amenable to cyanide treatment, can be treated to better advantage by the Kendall Process; this can be accepted as an axiom.

The manager of one of the largest mines in the Mercur district, Utah, telegraphs as follows: "We now begin to understand dioxide process; last 20 days treated 220 tons per day of \$26.50 ore, average of all tailings samples \$.83."

Owners of mines and reduction works can obtain full information on application to the

**Kendall Gold and Silver Extraction Co.**

47 Broadway, New York City

### The Puget Sound Reduction Company

PURCHASERS OF

### GOLD, SILVER, LEAD AND COPPER ORES

Special Facilities for Handling ores from the South-West and Mexico

EVERETT - - - WASHINGTON

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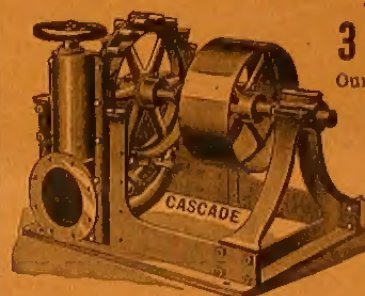
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**3 Feet to 2000 Feet**

Our experience of 33 YEARS building Water Wheels enables us to suit every requirement of Water Power Plants. We guarantee satisfaction.

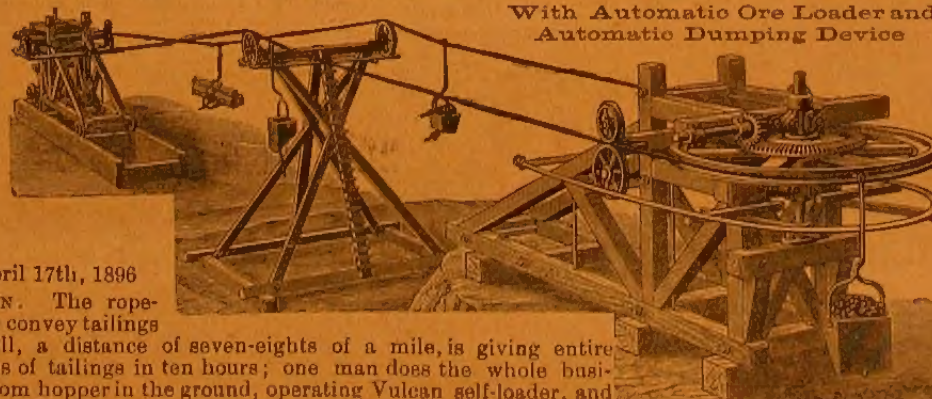
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**James Leffel & Co.**  
SPRINGFIELD, OHIO, U.S.A.



## VULCAN ROPEWAY

For Conveying  
Ore,  
Cordwood,  
Etc.



With Automatic Ore Loader and  
Automatic Dumping Device

EMPIRE, NEVADA, April 17th, 1896

Vulcan Iron Works:—GENTLEMEN. The ropeway furnished by your Company to convey tailings from Morgan Mill to Mexican Mill, a distance of seven-eighths of a mile, is giving entire satisfaction. We transport 200 tons of tailings in ten hours; one man does the whole business, including elevating tailings from hopper in the ground, operating Vulcan self-loader, and attending to the ropeway generally. The self-dumper requires no attention whatever. The Vulcan loader I consider the best feature in the whole Ropeway, making it possible for one man to load 200 tons in ten hours.

Yours very truly,

J. P. WOODBURY, Supt.

**VULCAN IRON WORKS,**

Manufacturers of Mining Machinery,  
SAN FRANCISCO, CAL.

Miners will find the ore tariffs on page 22 reliable. We have special arrangements with the different railroads to receive any changes as soon as made.

**CLARENCE HERSEY,**  
Assayer and Chemist,  
(Established 1870)

LEADVILLE, - - - COLORADO

Samples by Mail or Express Receive Prompt Attention

SPECIMEN ASSAY PRICES:

Gold silver and lead, \$1.00; any two of the above, 75c; any one of above, 50c; copper analysis, \$1; platinum, nickel or tin, \$5.00.  
Write for full price list and mailing envelopes.



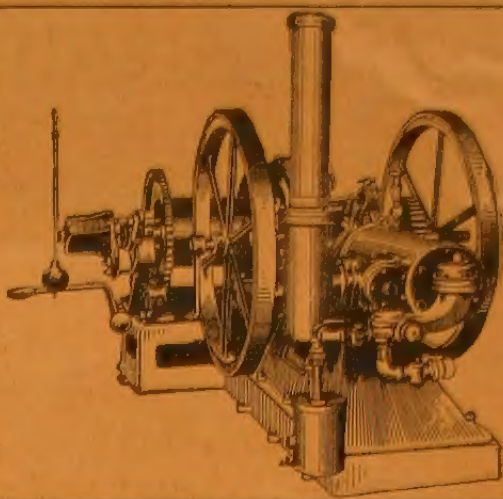
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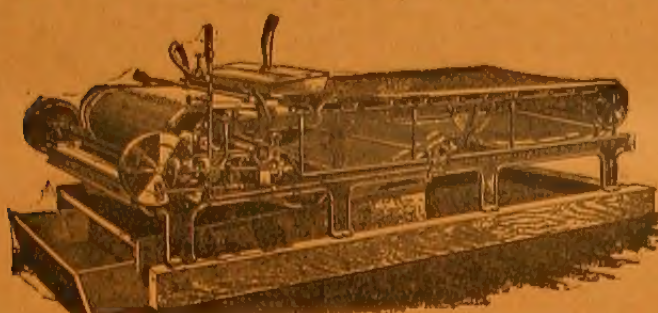
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Water Works Machinery  
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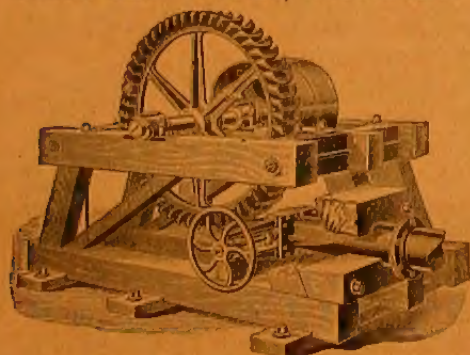
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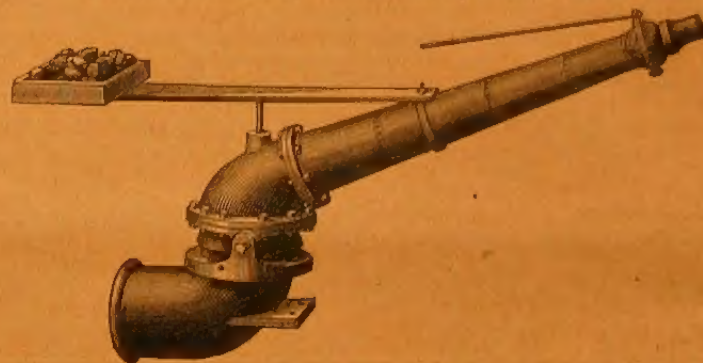
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The above cut shows the general arrangement of Knight's Standard Water Wheel, of which there are more than 450 in use in California alone. These wheels are made from 2 feet to 6 feet in diameter, from 10 to 1000 horse power, and adapted to all heads and purposes. Descriptive circulars mailed free on application.



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The above cut illustrates the improved form of Hydraulic Giants, in which the Center Bolt is dispensed with, which was so liable to catch trash. Prices and catalogues of our specialties sent free on application.

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MINING MACHINERY AND SUPPLIES, ENGINES AND BOILERS

ROFF STAIGHT LINE FURNACE

FOR ROASTING, CHLORINATING, AND DESULPHURIZING ORES.

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Wood Working, Iron Working and Saw Mill Machinery.